



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

2872







THE  
ZOOLOGICAL RECORD

VOLUME THE THIRTY-SEVENTH.

BEING  
RECORDS OF ZOOLOGICAL LITERATURE  
RELATING CHIEFLY TO THE YEAR  
1900.

By J. A. THOMSON, R. LYDEKKER, R. BOWDLER SHARPE, G. A. BOULENGER,  
W. A. HERDMAN, E. R. SYKES, E. A. SMITH, G. C. CRICK, A. WILLEY,  
A. W. BROWN, D. SHARP, F. A. BATHER, AND E. A. MINCHIN.

EDITED (FOR THE ZOOLOGICAL SOCIETY OF LONDON) BY  
DAVID SHARP, M.A., F.R.S., F.Z.S., &c.  
*Curator in Zoology, University Museum of Zoology, Cambridge.*

Explorate solum: sic fit via certior ultra.

LONDON:  
PRINTED FOR THE SOCIETY; SOLD AT THEIR HOUSE IN HANOVER SQUARE  
AND BY  
GURNEY & JACKSON, PATERNOSTER ROW.  
M.DCCCCL.

Communications, Papers, and Memoirs intended for this work should be addressed to "THE EDITOR of the Zoological Record, Zoological Society, 3, Hanover Square, London, W." It is earnestly requested that in the case of separately-printed copies of papers so forwarded, the *original pagination* may be indicated.

The Editor thanks those Societies and individuals who have forwarded works and papers for the purposes of the Record, and suggests that Societies publishing Zoological Papers would much facilitate the work of the Recorders by forwarding a separate copy of each Zoological Memoir they publish to the Editor for the use of the Recorder. This is preferable to sending the entire volume, because each paper can go directly to the Recorder it concerns.



H. B. 951

CAMBRIDGE:

PRINTED BY J. AND C. F. CLAY,  
AT THE UNIVERSITY PRESS.

## PREFACE.

---

THE thirty-seventh volume of the Zoological Record includes more matter than any of its predecessors ; the number of pages being about 180 more than were in the volume of last year. The index of new names amounts to 2102 entries ; the previous maximum for any year having been 1707, in 1895. Notwithstanding the increased work involved by this augmentation, the volume appears about the usual time, and the Editor feels correspondingly grateful to the Recorders, all of whom have been quite punctual in delivering their contributions. The list of abbreviations has again been thoroughly revised, Prof. E. A. Minchin having kindly given much assistance in this task.

The Editor is also glad to take this opportunity of thanking the Librarians who have assisted him in keeping accurate the indications of the Libraries in which the various periodicals are to be found.

D. SHARP.

CAMBRIDGE,

*October 25th, 1901.*





ALPHABETICAL LIST  
OF THE  
ABBREVIATIONS  
USED IN THE  
ZOOLOGICAL RECORD, Vol. XXXVII, 1900,  
FOR THE  
TITLES OF THE JOURNALS, TRANSACTIONS, ETC.  
THAT CONTAIN ZOOLOGICAL PAPERS;  
WITH INDICATIONS OF SOME OF THE PRINCIPAL  
LIBRARIES  
IN WHICH THE BOOKS ARE CURRENT.

---

THE primary object of this list is to enable those using the Record to find with ease the full title of a Journal they see quoted in an abbreviated form. The arrangement is therefore a simple alphabetical list of the abbreviations, uncomplicated by syllabic or verbal limitations.

The list has also to serve the Recorders and others as a list of Journals, and for this purpose it is important that it should be fairly complete as regards current periodicals. In order to increase the utility of the list, the abbreviations have been made on a uniform system; but a few exceptions have, in practice, been found necessary. The chief points that have been kept in view in constructing the abbreviations may be briefly stated as follows:—

The words selected as distinctive in each title are reduced in most cases to three or four.

A distinct abbreviation is used for each different word, and the same abbreviation for the same word is used throughout the list.

Accents are omitted. As a rule the first word of the title is represented by an abbreviation, but this rule is departed from in the case of articles and prepositions, and occasionally in the case of adjectives that are useless for distinctive purposes. Thus "Annual Report" becomes "Rep." and "Occasional Papers" becomes "Pap." Such adjectives as "New" and "Royal" are omitted, except when necessary for distinctive or other purposes.

The consecutive order of the words of the title is maintained in the abbreviation, except in a few cases where the arrangement of the words in the title is very unusual or faulty.



As an example of the form of abbreviation that is aimed at, we may take Bull. Soc. Moscou. The name of the locality is given at greater length than the more frequently used portions of the abbreviation.

After the titles, the place of publication is given, and this is followed by letters indicating some of the principal libraries in which the works may be consulted. The explanation of these letters is as follows:—

- N. = British Museum Natural History: general library.  
 Nz. = " " library, zoological department.  
 Ng. = " " geological " "  
 K. = Science library; South Kensington Museum.  
 R. = Royal Society library.  
 Z. = Zoological Society library.  
 L. = Linnean  
 C. = Cambridge University library.  
 C, p or (C) p = Cambridge Philosophical Society library.  
 b, or g, or y, after C, or (C) = Cambridge Balfour, or Woodwardian Museum, or Physiological libraries respectively.  
 O. = Radcliffe library, Oxford.  
 § is prefixed to titles added since the last list, and to changes of titles when important.

- Abeille*—L'Abeille: Journal d'entomologie publié par la Société entomologique de France. (Paris, 8vo.) Nz. C.  
*Abh. Ak. Berlin*—Abhandlungen der königlichen Akademie der Wissenschaften zu Berlin. (Berlin, 4to.) N. K. R. Z. L. C, p. O.  
*Abh. Bayer. Ak.*—Abhandlungen der mathematisch-physikalischen Classe der königlichen Bayerischen Akademie der Wissenschaften. (München, 4to.) N. K. R. Z. L. C, p. O.  
*Abh. Böhmisch. Ges.*—Abhandlungen der mathematisch-naturwissenschaftlichen Classe der k. Böhmischen Gesellschaft. [Called also] Rozprawy tridy matematicko-přirodověcké královské Ceske společnosti Nauk. (Prag, 4to.) N. K. R. L. C, p.  
*Abh. deutsch. Seefisch.-Ver.*—Abhandlungen des deutschen Seefischerei-Vereins. (Berlin, 4to.) Nz. C.  
*Abh. geol. Karte Elsass*—Abhandlungen zur geologischen Spezial-Karte von Elsass-Lothringen. (Strassburg, 8vo.) Ng.  
*Abh. geol. Landesanst. Darmstadt*—Abhandlungen der grossherzoglich Hessischen geologischen Landesanstalt zu Darmstadt. (Darmstadt, 8vo.) Ng.  
*Abh. geol. Reichsanst.*—Abhandlungen der Kaiserlich-Königlichen geologischen Reichsanstalt. (Vienna, 4to.) Ng. R. L. C, p.  
*Abh. Ges. Götting*—Abhandlungen der naturforschenden Gesellschaft zu Götting. (Götting, 8vo.) N. K. R.  
*Abh. Ges. Gotting.*—Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-Physikalische Klasse. Neue Folge. (Göttingen, 4to.) N. R. Z. L. C, p. O.  
*Abh. Ges. Halle*—Abhandlungen der naturforschenden Gesellschaft zu Halle. (Halle, 4to.) N. K. R. Z. L. C. O.  
*Abh. Ges. Isis*—Sitzungsberichte und Abhandlungen der naturwissenschaftlichen Gesellschaft 'Isis' in Dresden. (Dresden, 8vo.) N. K. Z. C.  
*Abh. Ges. Königsb.*—[Part of *Schr. Ges. Königsb.*, q.v.]

- Abh. Ges. Nurnberg*—Abhandlungen der naturhistorischen Gesellschaft zu Nürnberg. (Nürnberg, 8vo.) N. K. C.
- Abh. Ges. Wien*—[Part of *Verh. Ges. Wien*, q.v.]
- Abh. Hamburg. Anst.*—[Part of *Jahrb. Hamburg. Anst.*, q.v.]
- Abh. Mus. Dresden*—Abhandlungen und Berichte des königlichen zoologischen und anthropologisch-ethnographischen Museums zu Dresden. (Berlin, 4to.) Nz. Z. C.
- Abh. Preuss. geol. Landesanst.*—Abhandlungen der königlich Preussischen geologischen Landesanstalt (Neue Folge). [Formerly *Abh. geol. Spezialkarte von Preussen und den Thüringischen Staaten.*] (Berlin, 8vo.) Ng. K. C.
- Abh. Sachs. Ges.*—Abhandlungen der k. Sächsischen Gesellschaft der Wissenschaften. (Leipzig, 4to.) N. K. R. C, p.
- Abh. Schweiz. pal. Ges.*—Abhandlungen der Schweizerischen paläontologischen Gesellschaft. *Mémoires de la Société Paléontologique suisse.* (Basel, &c., 4to.) Ng. R. Z. (C) g. O.
- Abh. Senckenb. Ges.*—Abhandlungen herausgegeben von der Senckenbergischen naturforschenden Gesellschaft. (Frankfort a.-M., 4to.) N. K. R. Z. L. C. O.
- Abh. Ver. Bremen*—Abhandlungen herausgegeben vom naturwissenschaftlichen Verein zu Bremen. (Bremen, 8vo.) N. K. R. Z. L. C.
- Abh. Ver. Hamburg*—Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben vom naturwissenschaftlichen Verein in Hamburg. (Hamburg, 4to.) N. K. R. Z. L. C, b.
- Abh. Ver. Karlsruhe*—[Vide *Verh. Ver. Karlsruhe.*]
- Abh. Ver. Kassel*—[Issued with *Ber. Ver. Kassel*, q.v.]
- Abh. Ver. Lotos*—Abhandlungen des deutschen naturwissenschaftlich-medicinischen Vereines für Böhmen "Lotos." (Prag, 4to.) N. C.
- Acta Ac. German.*—N. Acta Academiæ Cæsareæ Leopoldino-Carolinæ Germanicæ naturæ curiosorum. [Called also] Verhandlungen der k. Leop.-Carol. deutschen Akademie der Naturforscher. (Halle, 4to.) N. K. R. Z. L. C, p. O.
- Act. Ac. Cordoba*—Actas de la Academia nacional de Ciencias en Córdoba. (Buenos Aires, 4to.) N. R. Z. L.
- Acta Soc. Faun. Fenn.*—Acta Societatis pro Fauna et Flora Fennica. (Helsingfors, 8vo.) N. R. L.
- Acta Soc. Lund.*—Acta regię Societatis physiographicæ Lundensis. [Published as part of *Acta Univ. Lund.*, q.v.]
- Acta Soc. Sci. Fenn.*—Acta Societatis Scientiarum Fennicæ. (Helsingfors, 4to.) N. K. R. Z. (C) p.
- Acta Soc. Upsal.*—Nova Acta regię Societatis Scientiarum Upsaliensis. (Upsala, 4to.) N. K. R. Z. L. C, p.
- Acta Univ. Lund.*—Acta Universitatis Lundensis. [Called also] Lunds Universitets Årsskrift, [and includes] Acta regię Societatis physiographicæ Lundensis, [also called] Kongl. fysiografiska Sällskapets i Lund Handlingar. (Lund, 4to.) N. K. R. L. C, p.
- Act. Soc. Bordeaux*—Actes de la Société Linnéenne de Bordeaux. (Bordeaux, 8vo.) N. Z. C.
- Act. Soc. Chili*—Actes de la Société scientifique du Chili. (Santiago, 4to.) R. Z.

- Act. Soc. Espan.*—Actas de la Sociedad española de historia natural. (Madrid, 8vo.) N. R. Z. C.
- Act. Soc. Helvet.*—Actes de la Société Helvétique des Sciences naturelles. [Called also] Verhandlungen der schweizerischen naturforschenden Gesellschaft. (Basel, &c., 8vo.) N. K. R. L. C. O.
- Afh. Mus. Lund.*—E Museo Lundii. En Samling af Afhandlinger. (Kjobnhavn, 8vo.) N. R. Z. L.
- Agric. Gaz. N. S. W.*—The Agricultural Gazette of New South Wales. (Sydney, 8vo.) Nz. R.
- § *Allg. Zeitschr. Ent.*—Allgemeine Zeitschrift für Entomologie. Organ der "Allgemeinen entomologischen Gesellschaft." (Neudamm, 8vo.) [Formerly called *Illustr. Zeitschr. Ent.*]
- Amer. Geol.*—The American Geologist, a Monthly Journal of Geology and allied Sciences. (Minneapolis, 8vo.) Ng. K. O.
- § *Amer. J. Physiol.*—The American Journal of Physiology. (Boston, 8vo.) N. K. R. (C) y. O.
- Amer. J. Sci.*—The American Journal of Science. (New Haven, 8vo.) N. K. R. Z. C, p. O.
- Amer. Micr. J.*—The American Monthly Microscopical Journal. (Washington, 8vo.) N. O.
- Amer. Natural.*—The American Naturalist. (Philadelphia, 8vo.) N. K. Z. L. C, b. O.
- An. Ac. Habana*—Anales de la real Academia de ciencias medicas, fisicas y naturales de la Habana. (Habana, 8vo.) N. R.
- Anat. Anz.*—Anatomischer Anzeiger. Centralblatt für die gesamte wissenschaftliche Anatomie. Amtliches Organ der anatomischen Gesellschaft. (Jena, 8vo.) Nz. K. Z. (C) b. O.
- Anat. Hefte. Arb.*—Anatomische Hefte. Referate und Beiträge zur Anatomie und Entwicklungsgeschichte. Erste Abteilung. Arbeiten aus Anatomischen Instituten. (Wiesbaden, 8vo.) K. C, b. O.
- Anat. Hefte. Ergebn.*—Anatomische Hefte. . . . Zweite Abteilung. Ergebnisse der Anatomie und Entwicklungsgeschichte. (Wiesbaden, 8vo.) K. C, b. O.
- Anh. Abh. Ak. Berlin*—Anhang zu den Abhandlungen der K. preuss. Akademie der Wissenschaften zu Berlin. (Berlin, 4to.)
- An. Mus. Buenos Aires*—Anales del Museo nacional de Buenos Aires. (Buenos Aires, 4to.) N. Ng. R. Z. L. O.
- An. Mus. Chile*—Anales del Museo Nacional de Chile. Publicados por orden del Gobierno de Chile. Primera Seccion. Zoología. (Santiago, 4to.) Z.
- An. Mus. La Plata*—Anales del Museo de La Plata. (Buenos Aires, &c., 4to.) Nz. Ng. R. Z. O.
- An. Mus. Mexico*—Anales del Museo nacional de México. (México, folio.) N.
- An. Mus. Montevideo*—Anales del Museo nacional de Montevideo. (Montevideo, 8vo.) N. L.
- Ann. Brit. Geol.*—Annals of British Geology. (London, 8vo.) Ng. K. O.

- Année biol.*—L'année biologique. Comptes-rendus annuels des travaux de Biologie générale. (Paris, 8vo.) N. K. Z. L. C, b. O.
- Ann. Fac. Marseille*—Annales de la Faculté des Sciences de Marseille, publiées sous les auspices de la municipalité. (Marseille & Paris, 4to.) N. R. (C) p.
- Ann. geol. Balkan.*—Annales géologiques de la péninsule Balkanique. (Belgrade, 8vo.) Ng.
- Ann. Geol. Pal.*—Annales de Géologie et de Paléontologie, publiées sous la direction du Marquis Antoine de Gregorio. (Palermo, 4to.) Ng. K. (C) g.
- Ann. Hebert*—Annales Hébert. Annales de stratigraphie et de paléontologie du laboratoire de géologie de la faculté des Sciences de Paris. (Paris, 8vo.) Ng.
- Ann. Hofmus. Wien*—Annalen des k. k. naturhistorischen Hofmuseums. (Wien, 8vo.) N. K. R. Z. L. (C) p. O.
- Ann. Inst. Jamaica*—Annals of the Institute of Jamaica. (Kingston, 4to.) N. R. L. C.
- Ann. Microgr.*—Annales de Micrographie, spécialement consacrées à la Bactériologie aux Protophytes et aux Protozoaires. (Paris, 8vo.) N. O.
- Ann. Mus. Belgique*—Annales du Musée royal d'histoire naturelle de Belgique. (Bruxelles, 4to.) K. R. C. O.
- Ann. Mus. Congo*—État indépendant du Congo. Annales du Musée du Congo, publiées par ordre du Secrétaire d'état. Série II. Zoologie. (Bruxelles, 4to.) Nz. K. R. Z. L. C.
- Ann. Mus. Genova*—Annali del Museo civico di Storia Naturale di Genova. (Genova, 8vo.) Nz. K. Z. L. C. O.
- Ann. Mus. Marseille*—Annales du Musée d'histoire naturelle de Marseille, Zoologie. (Marseille, 4to.) Nz. K. R. Z. L. C, p. O.
- Ann. Nat. Hist.*—Annals and Magazine of Natural History, including Zoology, Botany, and Geology. (London, 8vo.) Nz. K. Ng. R. Z. L. C, b, p. O.
- Ann. N. York Ac.*—Annals of the New York Academy of Sciences. Late Lyceum of Natural History. (New York, 8vo.) N. K. R. Z. L. C, p.
- Annot. zool. Japon.*—Annotationes zoologicae japonenses, auspiciis societatis zoologicae tokyonensis. (Tokyo, 8vo.) Nz. K. R. Z. L. C, b.
- Ann. Queensland Mus.*—Annals of the Queensland Museum. (Brisbane, 8vo.) N. L. (C) p.
- Ann. S. African Mus.*—Annals of the South African Museum. (Cape Town, 8vo.) (C) p.
- Ann. Sci. nat.*—Annales des Sciences naturelles. Zoologie et Paléontologie. Huitième série. (Paris, 8vo.) Nz. K. R. Z. L. C, p. O.
- Ann. Sci. nat. Porto*—Annaes de Sciencias naturaes publicados por Augusto Nobre. (Porto, 8vo.) N. R.
- Ann. Scott. Nat. Hist.*—The Annals of Scottish Natural History: a quarterly magazine, with which is incorporated "The Scottish Naturalist." (Edinburgh & London, 8vo.) N. Z. L. C.

- Ann. Soc. Agric. Lyon*—Annales de la Société d'Agriculture, Histoire naturelle et Arts utiles de Lyon. Septième série. (Lyons & Paris, 8vo.) N. R. L.
- Ann. Soc. Belge Micr.*—Annales de la Société Belge de Microscopie. (Bruxelles, 8vo.) N. (C) p.
- Ann. Soc. Bruxelles*—Annales de la Société Scientifique de Bruxelles. (Bruxelles, 8vo.) N.
- Ann. Soc. Charente*—Académie de la Rochelle. Annales de la Société des Sciences naturelles de la Charente inférieure. (La Rochelle, 8vo.) N.
- Ann. Soc. ent. Belgique*—Annales de la Société entomologique de Belgique. [Called also *Comptes-rendus*.] (Bruxelles, 8vo.) Nz. Z. L. C. O.
- Ann. Soc. ent. France*—Annales de la Société entomologique de France. (Paris, 8vo.) Nz. K. R. Z. L. C.
- Ann. Soc. geol. Belgique*—Annales de la Société géologique de Belgique. [Consists of *Bulletin* and *Mémoires*.] (Liège, 8vo.) Ng. R. (C) p.
- Ann. Soc. geol. Nord*—Annales de la Société géologique du Nord. (Lille, 8vo.) Ng.
- Ann. Soc. Linn. Lyon*—Annales de la Société Linnéenne de Lyon. Nouvelle série. (Lyon, 8vo.) N. R. Z. L. C. O.
- Ann. Soc. malac. Belgique*—Annales de la Société royale malacologique de Belgique. [Consists of *Mémoires* and *Bulletin*, qq.v.] (Bruxelles, 8vo.) Nz. R. Z. L.
- Annuaire Mus. St. Petersb.*—Annuaire du Musée zoologique de l'Académie impériale de St. Pétersbourg. [Called also *Ezheghodnik zoologicheskagho muzeya Imperatorskoï a'kademii nauk*.] (St. Pétersbourg, 8vo.) N. R. Z. L.
- Annuaire. Ac. Porto*—Annuario da Academia polytechnica do Porto. (Porto, 8vo.) N.
- Annuaire. Univ. Coimbra*—Universidade de Coimbra Annuario. (Coimbra, 8vo.) N.
- § *Ann. Univ. Jassy*—Annales scientifiques de l'Université de Jassy. (Jassy, 8vo.) R. Z. C, p.
- Ann. Univ. Kharkow*—Annales de l'Université de Kharkow [called also *Zapiski imperatorskagho Khakovskagho Universiteta*]. (Kharkow, 8vo.) (C) p.
- Ann. Univ. Lyon*—Annales de l'Université de Lyon. Nouvelle série. 1. Sciences, Médecine. (Paris, 8vo.) N. R. C, p.
- Ann. Univ. Toscane*—Annali delle Università Toscane. (Pisa, 4to.) N.
- An. Soc. Argent.*—Anales de la Sociedad científica Argentina. (Buenos Aires, 8vo.) N.
- An. Soc. Espan.*—Anales de la Sociedad Española de historia natural. (Madrid, 8vo.) N. R. Z. C.
- Antanan. Ann.*—Antananarivo Annual and Madagascar Magazine. (Antananarivo, 8vo.) N.
- An. Univ. Chile*—Anales de la Universidad de Chile. (Santiago, 8vo.) N. Z. C.

- Anz. Ak. Wiss.*—Anzeiger der k. Akademie der Wissenschaften. Mathematisch-naturwissenschaftliche Classe. (Wien, 8vo.) N. R. L. Z. C.
- Appalachia*—Appalachia : the Journal of the Appalachian Mountain Club. (Boston, 8vo.) N.
- Aquila*—Aquila a Magyar madártani Központ folyóirata. (Budapest, 4to.) Nz. Z.
- Arb. Inst. Wien*—Arbeiten aus dem zoologischen Institute der Universität Wien und der Zoologischen Station in Triest. (Wien, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arb. Inst. Würzburg*—Arbeiten aus dem zoologisch-zootomischen Institut in Würzburg. (Wiesbaden, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arb. Lab. Warsaw*—[Vide *Rabot. Lab. Warsaw*.]
- Arb. Ver. Riga*—Arbeiten des Naturforscher-Vereins zu Riga. Neue Folge. (Riga, 8vo.) N.
- Arch. Anat.*—Archiv für Anatomie und Entwicklungsgeschichte. Anatomische Abtheilung des Archives für Anatomie und Physiologie [Hia.] (Leipzig, 8vo.) K. R. Z. C, b, p, y. O.
- Arch. anat. micr.*—Archives d'anatomie microscopique. (Paris, 8vo.) N. (C) b. O.
- Arch. Anthropol.*—Archiv für Anthropologie. Zeitschrift für Naturgeschichte und Urgeschichte des Menschen. [Includes *CB. Ges. Anthropol.*] (Brunswick, 4to.) R. O.
- Arch. Anthropol. Geol. Schleswig.*—Archiv für Anthropologie und Geologie Schleswig-Holsteins und der benachbarten Gebiete. (Kiel, Leipzig, 8vo.) N.
- Arch. Biol.*—Archives de Biologie. (Gand & Paris, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arch. Dorpat. Ges.*—Archiv für die Naturkunde Liv-, Ehst- und Kurlands. Herausgegeben von der Dorpater Naturforscher-Gesellschaft. Zweite Serie. Biologische Naturkunde. (Dorpat, 8vo.) K. N. Z.
- Arch. Entwicklmech.*—Archiv für Entwicklungsmechanik der Organismen. (Leipzig, 8vo.) K. Z. L. (C) b. O.
- Arch. ges. Physiol.*—Archiv für die gesammte Physiologie des Menschen und der Thiere. [Pflüger.] (Bonn, 8vo.) K. R. C, p, y. O.
- Arch. ital. Biol.*—Archives italiennes de Biologie. Revues, résumés, reproductions des travaux scientifiques italiens. (Turin, 8vo.) N. C, y. O.
- Arch. Landesdf. Bohmen*—Archiv für naturwissenschaftliche Landesdurchforschung von Böhmen. (Prag, 8vo.) N. Z. C.
- Arch. mikr. Anat.*—Archiv für mikroskopische Anatomie. (Bonn, 8vo.) K. R. Z. L. C, b, p, y. O.
- Arch. miss. Sci.*—Nouvelles archives des missions scientifiques et littéraires, choix de rapports et instructions, &c. (Paris, 8vo.) N.
- Arch. Mus. Lyon*—Archives du Muséum d'histoire naturelle de Lyon. (Lyon, 4to.) N. R. Z. O.
- Arch. Mus. Paris*—Nouvelles Archives du Muséum d'histoire naturelle. Troisième série. (Paris, 4to.) N. R. Z. L. C, p. O.

- Arch. Mus. Teyler*.—Archives du Musée Teyler. (Harlem, 4to.) N. R. Z. C, p, g. O.
- Arch. Naturg.*—Archiv für Naturgeschichte. (Berlin, 8vo.) Nz. K. R. Z. L. C, b, p. O.
- Arch. Naturv. Christian.*—Archiv for Mathematik og Naturvidenskab. (Christiania, 8vo.) N. R. Z. O.
- Arch. Neerland.*—Archives Néerlandaises des Sciences exactes et naturelles, publiées par la Société Hollandaise des Sciences à Harlem. (Harlem, 8vo.) N. R. Z. L. C. O.
- Arch. parasit.*—Archives de parasitologie. (Paris, 8vo.) N. Z. (C) b. O.
- Arch. Physiol.*—Archiv für Physiologie. Physiologische Abtheilung des Archives für Anatomie und Physiologie. (Leipzig, 8vo.) K. R. Z. (C) p, y. O.
- Arch. Physiol. norm. path.*—Archives de Physiologie normale et pathologique. [Brown-Séguard.] (Paris, 8vo.) K. R. C, y. O.
- Arch. Sci. biol.*—Archives des Sciences biologiques. Publiées par l'Institut Impérial de Médecine expérimentale à St. Pétersbourg. (St. Pétersbourg, 4to.) O.
- Arch. Sci. Nat.*—Bibliothèque universelle. Archives des Sciences physiques et naturelles. Troisième période. [Vide also *C.R. Soc. Helvet.*] (Genève, 8vo.) N. R. C, p.
- Arch. Ver. Mecklenb.*—Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg. (Güstrow, 8vo.) N. L.
- Arch. Zeeuwsc. Genoots.*—Archief. Vroegere en latere Mededeelingen voornamelijk in betrekking tot Zeeland, uitgeven door het Zeeuwsc Genootschap der Wetenschappen. (Middelburg, 8vo.) N.
- Arch. Zool. exp.*—Archives de Zoologie expérimentale et générale. (Paris, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arch. zool. exp. Notes.*—Archives de Zoologie expérimentale et générale. Notes et Revue. (Paris, 8vo.) Nz. K. R. Z. L. C, b. O.
- § *Atti Acc. Acireale*.—Atti e rendiconti dell' Accademia di scienza, lettere e arti dei zelanti e PP. dello studio di Acireale. Nuova serie. Classe scienze. (Acireale, 8vo.) N. R. (C) p.
- Atti Acc. Gioen.*—Atti dell' Accademia Gioenia di Scienze naturali in Catania. Serie quarta. (Catania, 4to.) N. R.
- Atti Acc. Lincei*.—Atti della R. Accademia dei Lincei. [Consists of Memorie and Rendiconti, qq.v.] N. K. R. Z. L. (C) p. O.
- Atti Acc. Napoli*.—Società Reale di Napoli. Atti della R. Accademia delle Scienze fisiche e matematiche. Serie seconda. (Napoli, 4to.) N. R. L. C, p. O.
- § *Atti Acc. Padova*.—Atti e Memorie della R. Accademia di scienze lettere ed arti in Padova. Nuova serie. (Padova, 8vo.) N.
- Atti Acc. Palermo*.—Atti della Reale Accademia di Scienze, Lettere e Belle Arti di Palermo. (Palermo, 4to.) N. K.
- Atti Acc. Pontan.*—Atti della Accademia Pontaniana. (Napoli, 4to.) N. R.
- Atti Acc. Pont. Lincei*.—Atti dell' Accademia Pontificia de' nuovi Lincei. (Roma, 4to.) N. K. R.

LIST OF ABBREVIATIONS.

xv

- Atti Acc. Torino*—Atti della R. Accademia delle Scienze di Torino. (Torino, 8vo.) N. K. R. Z. L. C, p.
- Atti Ist. Napoli*—Atti del Reale Istituto d' incoraggiamento alle Scienze naturali economiche e tecnologiche di Napoli. Quarta serie. (Napoli, 4to.) N. K.
- Atti Ist. Veneto*—Atti del Reale Istituto Veneto di Scienze Lettere ed Arti. Serie vii. (Venezia, 8vo.) N. K. R. L.
- Atti Mus. Milano*—Atti della Società italiana di Scienze naturali e del Museo civico di storia naturale in Milano. (Milano, 8vo.) N. K. R. Z. C.
- Atti Mus. Trieste*—Atti del Museo civico di Storia naturale di Trieste. (Trieste, 8vo.) N. R.
- Atti Soc. Ital.*—[Vide *Atti Mus. Milano*.]
- Atti Soc. Ligustica*—Atti della Società Ligustica di Scienze naturali e geografiche. (Genova, 8vo.) N. R.
- Atti Soc. Modena*—Atti della Società dei Naturalisti di Modena. (Modena, 8vo.) N. Z. C.
- Atti Soc. Toscana*—Atti della Società Toscana di Scienze naturali residente in Pisa. [Consists of two separate works, Memorie and Processi verbali.] (Pisa, 8vo.) N. R.
- Atti Soc. Veneto-Trent.*—Atti della Società Veneto-Trentina di Scienze naturali residente in Padova. (Padova, 8vo.) N. Z.
- Atti Univ. Genova*—Atti della R. Università di Genova. (Genova, 8vo.) N.
- Auk*—The Auk: a Quarterly Journal of Ornithology. (New York, 8vo.) Nz. Z.
- Avicula*—Avicula, Giornale ornitologico italiano. (Siena, 8vo.) Nz.
- Avicult. Mag.*—The Avicultural Magazine, being the journal of the Avicultural Society for the study of foreign and British birds. (Brighton, 8vo.) Z.
- Beihft Hamburg Anst.*—[Vide *Mt. Mus. Hamburg*.]
- Beitr. Geol. Braunschweig*—Beiträge zur Geologie und Paläontologie des Herzogthums Braunschweig und der angrenzenden Landestheile, herausgegeben im Auftrage des Herzoglichen Staats-Ministeriums von Herzoglicher Cammer, Direction der Bergwerke. (Braunschweig, 8vo.) Ng.
- Beitr. geol. Karte Schweiz*—Beiträge zur geologischen Karte der Schweiz. (Bern, 4to.) Ng. C.
- Beitr. Naturk. Preuss.*—Beiträge zur Naturkunde Preussens, herausgegeben von der Physikalisch-Oekonomischen Gesellschaft zu Königsberg. (Königsberg, 4to.) Ng. R. L. O.
- Beitr. Pal. Oesterr.-Ung.*—Beiträge zur Paläontologie Österreich-Ungarns und des Orients. (Wien, 4to.) Ng. R.
- Ber. Annaberg Ver.*—Bericht über den Annaberg-Buchholzer Verein für Naturkunde. (Annaberg, 8vo.) N.
- Ber. deutsch. ornith. Ges.*—Allgemeine deutsche ornithologische Gesellschaft zu Berlin. Bericht über die . . . Jahresversammlung. [Forms part of *J. Ornithol.*, q.v.]



*Berlin. Mus. Berlin.*—Abhandlungen u. Mittheilungen abgibt an Josephus Museum. (Comptes et Abhandlungen aus der Sammlung.) Berlin. tw. N. K. I. 2. 1. 2.

*Ber. Ges. Berlin.*—Bericht der naturwissenschaftlichen Gesellschaft zu Berlin. Berlin. tw. N.

*Ber. Ges. Chemnitz.*—Bericht der naturwissenschaftlichen Gesellschaft zu Chemnitz. Chemnitz. tw. N.

*Ber. Ges. Freiberg.*—Bericht der naturwissenschaftlichen Gesellschaft zu Freiberg. Freiberg. I. tw. N. K. I. 2. 1. 2. 3.

*Ber. Ges. Halle.*—Bericht über die Thätigkeit der naturwissenschaftlichen Gesellschaft zu Halle. Halle. tw. N. K. I. 2. 1. 2. 3.

*Berlin. an. Zeitschr.*—Bericht naturwissenschaftlicher Zeitschrift. Herausgegeben von dem naturwissenschaftlichen Verein zu Berlin. Berlin. tw. N. K. I. 2. 1. 2. 3.

*Ber. Mus. London.*—The Mus. London.

*Ber. Berlin. Ges.*—Bericht der Oberbayerischen Gesellschaft für Natur- und Heilkunde. München. tw. N. K. I. 2. 1. 2.

*Ber. Berlin. pub. Ter.*—Bericht über die Thätigkeiten der Oberbayerischen geologischen Vereins. München. tw. N.

*Ber. Berl. Ter.*—Bericht über die Thätigkeiten des (berliner) Vereins für Naturkunde. Berlin. tw. N. K. I.

*Ber. Berlin. Ges.*—Bericht über die Thätigkeiten der k. sächsischen Gesellschaft der Wissenschaften zu Leipzig. Mathematisch-naturwissenschaftliche Classe. Leipzig. tw. N. K. I. 2. 1. 2. 3.

*Ber. Frankfurt. Ges.*—Bericht über die Senckenbergische naturwissenschaftliche Gesellschaft zu Frankfurt-am-Main. Frankfurt. tw. N. K. I. 2. 1. 2. 3.

*Ber. St. Gall. Ges.*—Bericht über die Thätigkeit der St. Gallischen naturwissenschaftlichen Gesellschaft. St. Gallen. tw. N. K. I. 2.

*Ber. Ver. Augsburg.*—Bericht des naturwissenschaftlichen Vereins für Schwaben und Neuburg a. V. früher naturhistorischen Vereins in Augsburg. Augsburg. tw. N.

*Ber. Ver. Jena.*—Bericht des naturwissenschaftlich-medizinischen Vereines in Jena. Jena. tw. N. K. I. 2. 3.

*Ber. Ver. Kassel.*—Bericht des Vereins für Naturkunde zu Kassel. Kassel. tw. N.

*Ber. Ver. Passau.*—Bericht des naturhistorischen Vereines in Passau. Passau. tw. N.

*Ber. Ver. Regensburg.*—Berichte des naturwissenschaftlichen Vereines zu Regensburg. Regensburg. tw. N.

*Bibl. géol. Rus.*—Bibliothèque géologique de la Russie. St. Petersburg. tw. N.

*Bibl. hautes études.*—Bibliothèque de l'école des hautes études. Section des Sciences naturelles. (Paris. tw.) N. K.

*Bibliog. anat.*—Bibliographie anatomique. Revue des travaux en langue française. Anatomie, histologie, embryologie, anthropologie. (Paris. tw.) N.

- Bibl. universelle*.—Bibliothèque universelle. [Vide *Arch. Sci. Nat.*]
- Bidr. Finlands Nat.*.—Bidrag till Kännedom af Finlands Natur och Folk. (Helsingfors, 8vo.) N. R. Z. (C) p.
- Bih. Svenska Ak.*.—Bihang till K. Svenska Vetenskaps-Akademiens Handlingar. Afdelning 4. (Stockholm, 8vo.) N. K. R. Z. L. C, p.
- § *Bijl. Java Suikerind.*.—De indische Natuur. Algemeen Natuurwetenschap. Bijblad van het Archief voor de Java-Suikerindustrie. (8vo.)
- Bijdr. Dierk.*.—Bijdragen tot de Dierkunde uitgeven door het Genootschap Natura artis magistra. (Amsterdam, 4to.) Nz. K. R. L. C, b.
- Biol. Bull.*.—Biological Bulletin. Edited by the Director and Members of the Staff of the Marine biological laboratory Wood's Holl, Mass. (Boston, 8vo.) N. K. Z. L. (C) b. O.
- Biol. Centrbl.*.—Biologisches Centralblatt. (Leipzig, 8vo.) N. K. R. L. Z. C, b. O.
- Biol. Centr.-Amer.*.—Biologia Centrali-Americana. (London, 4to.) Nz. K. Z. L. (C) p. O.
- Biol. Foren. Forh.*.—Biologiska Föreningens Förhandlingar. Verhandlungen des biologischen Vereins in Stockholm. (Stockholm and Leipzig, 8vo.) N. K. R. C. O.
- Biol. Lect. Wood's Holl*.—Biological Lectures from the Marine Biological Laboratory, Wood's Holl, Mass. (Boston, 8vo.) K. L. (C) b. O.
- Biol. Untersuch.*.—Biologische Untersuchungen von Prof. Dr. Gustaf Retzius. Neue Folge. (Stockholm, 4to.) C. O.
- Blatt. Aquar. Fr.*.—Blätter der Aquarien- und Terrarien-Freunde. (Berlin.)
- Board Agric. leaf.*.—Board of Agriculture leaflets. (London.) N. K.
- Bol. Ac. Barcelona*.—Boletín de la real Academia de Ciencias y Artes de Barcelona. (Barcelona, 4to.) N.
- Bol. Ac. Cordoba*.—Boletín de la Academia nacional de Ciencias en Cordoba (República Argentina). (Buenos Aires, 8vo.) [Formerly *Ac. Argentina*.] N. R. Z. L.
- Bol. Com. geol. espan.*.—Boletín de la Comisión del mapa geológico de España. (Madrid, 8vo.) Ng. R. O.
- § *Bol. Comm. geogr. Minas Geraes*.—Boletim de Comissão geographica e geologica do Estado de Minas Geraes. (Rio de Janeiro, 8vo.) N.
- Bol. Com. geol. Ital.*.—Bollettino del R. Comitato geologico d' Italia. (Roma, 8vo.) Ng. R.
- Boll. Comm. S. Paulo*.—Boletim da Comissão geographica e geologica da Provincia de S. Paulo. (S. Paulo, 8vo.) N.
- § *Bol. Inst. geol. Mexico*.—Boletín del Instituto geologico de Mexico. (Mexico, 4to.) Ng. K. (C) p.
- Boll. Acc. Gioen.*.—Bollettino mensile della Accademia Gioenia di Scienze naturali in Catania. (Catania, 8vo.) N. R.

- Boll. Mus. Genova*.—Bollettino dei Musei di Zoologia e Anatomia comparata della R. Università di Genova. (Genova, 8vo.) [Apparently reprints from *Atti Soc. Ligustica*.] (C) z.
- Boll. Mus. Torino*.—Bollettino dei Musei di Zoologia ed Anatomia comparata della R. Università di Torino. (Torino, 8vo.) Nz. Z. L.
- Boll. Nat.*.—[Vide *Riv. ital. Sci. Nat.*]
- Boll. scient.*.—Bollettino scientifico. (Pavia, 8vo.) N.
- Boll. Soc. Adriat.*.—Bollettino della Società Adriatica di Scienze naturali in Trieste. (Trieste, 8vo.) N. R.
- Boll. Soc. geol. Ital.*.—Bollettino della Società geologica Italiana. (Roma, 8vo.) Ng.
- Boll. Soc. Napoli*.—Bollettino della Società di Naturalisti in Napoli. (Napoli, 8vo.) N. R. Z. (C) p.
- Boll. Soc. Rom. Zool.*.—[Vide *Boll. Soc. zool. Ital.*]
- § *Boll. Soc. zool. Ital.*.—Bollettino della Società zoologica Italiana. (Roma, 8vo.) [Formerly called *Boll. Soc. rom. Zool.*] Nz. Z.
- Bol. Mus. Para.*.—Boletim do Museu paraense. (Para, 8vo.) Z.
- Bol. Mus. Valparaiso*.—[Vide *Revist. Chilena*.]
- § *Bol. Soc. espan.*.—Boletín de la Sociedad española de Historia natural. (Madrid, 8vo.) N. R. Z. C.
- Brit. Natural.*.—The British Naturalist. (London, 8vo.) N. C.
- Bull. Ac. Belgique*.—Bulletins de l'Académie royale des Sciences, des Lettres, et des Beaux-arts de Belgique. 3<sup>e</sup> Série. (Bruxelles, 8vo.) N. K. R. Z. L. C, p. O.
- Bull. Ac. Cracovie*.—Bulletin international de l'Académie des Sciences de Cracovie. Comptes-rendus des séances. (Cracovie, 8vo.) N. R. Z. O.
- Bull. Ac. St. Petersb.*.—Izvestiya Imperatorskoj akademii nauk. Bulletin de l'Académie impériale des Sciences de St. Pétersbourg. V<sup>e</sup> Série. (St. Pétersbourg, 8vo.) N. K. R. L. C, p. O.
- Bull. Agric. Brisbane*.—Queensland. Department of Agriculture, Brisbane, Bulletin. [Consists chiefly of *Rep. Dep. Agric. Brisbane*.] (Brisbane, 8vo.) N.
- Bull. Amer. Mus.*.—Bulletin of the American Museum of Natural History. (New York, 8vo.) N. K. R. Z. L. (C) p. O.
- Bull. Amer. Pal.*.—Bulletins of American Paleontology. (Cornell Univ., Ithaca, 8vo.) Ng.
- Bull. Arizona exp. Stat.*.—University of Arizona. Arizona agricultural experiment Station. Bulletin. (Tucson, 8vo.)
- Bull. Brookville Soc.*.—Bulletin of the Brookville Society of Natural History. (Richmond, 8vo.) N. L.
- Bull. Buffalo Soc.*.—Bulletin of the Buffalo Society of Natural Sciences. (Buffalo, 8vo.) N. R. L. C.
- Bull. Bussey Inst.*.—Bulletin of the Bussey Institution. (Cambridge, Mass., 8vo.) N. R.
- Bull. Carte geol. France*.—Bulletin des Services de la Carte géologique de la France et des Topographies souterraines. (Paris, 8vo.) Ng.

- Bull. Czecha Ac.*—Académie des sciences de l'Empereur François Joseph I (Česká Akademie Císaře Františka Josefa I) IV. Bulletin international. Résumés des travaux présentés. Sciences mathématiques et naturelles. (Prague, 8vo.) N. (C) p.
- Bull. Coll. Agric. Tokyo*—Imperial University. College of Agriculture. Bulletin. (Tōkyō, 8vo.)
- Bull. Colorado exp. Stat.*—The State agricultural College. Agricultural experiment Station. Bulletin. (Fort Collins, 8vo.)
- Bull. Com. geol. St. Petersb.*—Bulletin du Comité géologique de St. Pétersbourg. (St. Pétersbourg.) Ng. K. R.
- Bull. Cornell Exp. Stat.*—Cornell University Agricultural Experiment Station. Bulletin. Entomological Division. (Ithaca, 8vo.)
- Bull. Cornell Univ.*—Bulletin of the Cornell University. (Science.) (Ithaca, 8vo.) N. O.
- Bull. Denison Univ.*—Bulletin of the Scientific Laboratories of Denison University. (Granville, 8vo.) N. Z. (C) p.
- Bull. Dep. Agric. Brisbane*—[Vide *Rep. Dep. Agric. Brisbane.*]
- Bull. B. O. C.*—[Vide *Bull. Ornith. Club.*]
- Bull. Dep. Agric. Ent.*—[Vide *Bull. U. S. Dep. Agric. Ent.*]
- Bull. Essex Inst.*—Bulletin of the Essex Institute. (Salem, 8vo.) N. K. R. Z. (C) p.
- Bull. Exp. Stat. Florida*—Bulletin of the Experiment Station of Florida at the State Agricultural College. (Jacksonville, 8vo.)
- Bull. Geol. Caen*—Bulletin du Laboratoire de Géologie de la Faculté des Sciences de Caen. (Caen, 8vo.) Ng.
- Bull. Comm. geol. Finlande*—Bulletin de la Commission géologique de Finlande. (Helsingfors, 8vo.) Ng.
- Bull. Geol. Inst. Upsala*—Bulletin of the Geological Institute of Upsala. (Upsala, 8vo.) Ng. (C) p.
- Bull. Geol. Soc. Amer.*—Bulletin of the Geological Society of America. (Rochester, 8vo.) Ng. O.
- § *Bull. geol. surv. Alabama*—Geological Survey of Alabama. Bulletin. (Montgomery, 8vo.) Ng.
- Bull. Geol. Surv. Minnesota*—Bulletin. Geological and Natural History Survey of Minnesota. (Minneapolis, 8vo.) Ng. O.
- Bull. Geol. Surv. Missouri*—Geological Survey of Missouri. Bulletin. (Jefferson City, 8vo.) Ng.
- § *Bull. geol. Univ. Calif.*—University of California. Bulletin of the Department of Geology. (Berkeley, 8vo.) Ng. K. (C) p.
- Bull. Illinois exp. Stat.*—University of Illinois Agricultural experiment Station. Bulletin. (Springfield, 8vo.)
- Bull. Illinois Lab.*—Bulletin of the Illinois State Laboratory of Natural History. (Peoria, 8vo.) N. Z. L. (C) p.
- Bull. Illinois Mus.*—Bulletin of the Illinois State Museum of Natural History. (Springfield, 4to.) Ng. Z.

- Bull. Inst. Egypt.*—Bulletin de l'Institut Égyptien, Troisième série. (Le Caire, 8vo.) N.
- Bull. Inst. Genev.*—Bulletin de l'Institut nationale Genevois. (Genève, 8vo.) N. R. C.
- Bull. kol. Mus. Haarlem.*—Bulletin van het kolonial Museum te Haarlem. (Amsterdam, 8vo.) N.
- Bull. Lab. Iowa.*—Bulletin from the Laboratories of Natural History of the State University of Iowa. (Iowa City, 8vo.) N.
- Bull. Lab. St. Petersb.*—Bulletin de la Laboratoire biologique de St. Pétersbourg. [Called also] Izvestiya . . . Izdanie pod redaktsiei P. Lesghafta. (St. Pétersbourg, 8vo.) N. K.
- Bull. Liverp. Mus.*—Bulletin of the Liverpool Museums under the City Council. (Liverpool, 8vo.) N. Z.
- Bull. Minnesota Ac.*—Bulletin of the Minnesota Academy of Natural Sciences. (Minneapolis, 8vo.) N. K.
- Bull. Mus. Harvard.*—Bulletin of the Museum of Comparative Zoölogy at Harvard College in Cambridge. (Cambridge, Mass., 8vo.) Nz. R. Z. L. (C) p. O.
- Bull. Mus. Madras.*—Madras government Museum. Bulletin. (Madras, 8vo.) Nz. R. Z. L. (C) p.
- Bull. Mus. Marseille.*—Annales du Musée d'histoire naturelle de Marseille Série II. Bulletin, notes zoologiques, géologiques, paléontologiques, variétés. (Marseille, 4to.) N. Z. L. O.
- Bull. Mus. Paris.*—Muséum d'histoire naturelle. Bulletin du Muséum d'histoire naturelle. (Paris, 8vo.) N. K. R. Z. L. C. O.
- Bull. N. Mexico Stat.*—New Mexico College of Agriculture and the mechanic Arts. Agricultural experiment Station. Bulletin. (Las Cruces, 8vo.)
- Bull. N. York Mus.*—Bulletin of the New York State Museum. (Albany, 8vo.) N. R. L.
- Bull. Ohio Exp. Stat.*—Bulletin of the Ohio Agricultural Experiment Station. Technical Series. (Columbus, 8vo.)
- Bull. Ornith. Club.*—Bulletin of the British Ornithologists' Club. (London, 8vo.) Nz. Z. O.
- Bull. Sci. France Belgique.*—Bulletin scientifique de la France et de la Belgique. (Paris, 8vo.) N. Z. C, b. O.
- Bull. Soc. Angers.*—Bulletin de la Société d'Études scientifiques d'Angers. (Angers, 8vo.) N.
- Bull. Soc. Anthropol. Lyon.*—Bulletin de la Société d'Anthropologie de Lyon. (Lyon, 8vo.) R.
- Bull. Soc. Anthropol. Paris.*—Bulletins de la Société d'Anthropologie de Paris. (Paris, 8vo.) R. C. O.
- Bull. Soc. Aude.*—Bulletin de la Société d'Études scientifiques de l'Aude. (Carcassonne, 8vo.) N.
- Bull. Soc. Autun.*—Société d'Histoire Naturelle d'Autun. Bulletin. (Autun, 8vo.) N.

- Bull. Soc. Belge Geol.*—Bulletin de la Société belge de Géologie, de Paléontologie et d'Hydrologie. [Consists of Pr.-verb. and Mémoires.] (Bruxelles, 8vo.) Ng.
- Bull. Soc. Belge Micr.*—Bulletin de la Société belge de Microscopie. (Bruxelles, 8vo.) N. (C) p.
- Bull. Soc. Beziers*—Bulletin de la Société d'étude des Sciences naturelles de Béziers. Compte-rendu des séances (extrait des procès-verbaux). (Béziers, 8vo.) N. R.
- Bull. Soc. Borda Dax*—Société de Borda Dax. Bulletin trimestriel. (Dax, 8vo.) N.
- Bull. Soc. Bruxelles*—Bulletin de la Société royale Linnéenne de Bruxelles. (Bruxelles, 8vo.) N. Z.
- Bull. Soc. Bucarest*—Buletinul Societatii de Stiinta din Bucuresti-România, Bulletin de la Société des Sciences Bucarest-Roumanie. (Bucuresti, 8vo.) N. R.
- Bull. Soc. Colmar*—Bulletin de la Société d'histoire naturelle de Colmar. (Colmar, 8vo.) N.
- Bull. Soc. Elbeuf*—Bulletin de la Société d'étude des sciences naturelles d'Elbeuf. (Elbeuf, 8vo.) N.
- Bull. Soc. ent. France*—Bulletin des séances et Bulletin bibliographique de la Société entomologique de France [published with *Ann. Soc. ent. France*]. (Paris, 8vo.) Nz. K. R. Z. L. C.
- Bull. Soc. ent. Ital.*—Bullettino della Società entomologica italiana. (Firenze, 8vo.) Nz. Z. O.
- Bull. Soc. ent. Suisse*—[Vide *Mt. Schweiz. ent. Ges.*]
- Bull. Soc. Finistere*—Bulletin de la Société d'études scientifiques du Finistère. (Morlaix, 8vo.) N.
- Bull. Soc. Fribourg*—Bulletin de la Société fribourgeoise des Sciences naturelles. (Fribourg, 8vo.) N.
- Bull. Soc. geol. Belgique*—[Included in *Ann. Soc. geol. Belgique*, q.v.]
- Bull. Soc. geol. France*—Bulletin de la Société géologique de France. [Includes *Compte-rendu*.] (Paris, 8vo.) Ng. K. R. C. O.
- Bull. Soc. geol. Normand.*—Bulletin de la Société géologique de Normandie. (Havre, 8vo.) Ng.
- Bull. Soc. hist. nat. Toulouse*—Société d'histoire naturelle de Toulouse. Bulletin. (Toulouse, 8vo.) N. Z.
- § *Bull. Soc. Metz*—Bulletin de la Société d'histoire naturelle de Metz. (Metz, 8vo.) N.
- Bull. Soc. Isere*—Bulletin de la Société de statistique des sciences naturelles et des arts industriels du département de l'Isère. 4<sup>e</sup> Série. (Grenoble, 8vo.) N.
- Bull. Soc. Jassy*—Le Bulletin de la Société des médecins et des naturalistes de Jassy. (Jassy, 8vo.) N.
- Bull. Soc. malac. Belgique*—Bulletin des séances de la Société royale malacologique de Belgique [forms part of *Ann. Soc. malac. Belgique*, q.v.]. (Bruxelles, 8vo.) Nz. R. L.
- Bull. Soc. malac. Ital.*—Bullettino della Società malacologica italiana. (Pisa, 8vo.) Nz. Z. O.

- Bull. Soc. Moscou*.—Bulletin de la Société impériale des Naturalistes de Moscou. (Moscou, 8vo.) N. K. R. Z. L. C, p. O.
- Bull. Soc. Murith*.—Bulletin des travaux de la Murithienne. Société Valaisanne des Sciences naturelles. (Sion, 8vo.) N.
- Bull. Soc. Nancy*.—Bulletin de la Société des Sciences de Nancy. Série II. (Paris, 8vo.) N. R.
- Bull. Soc. Nancy, seances*.—Bulletin des Séances de la Société des Sciences de Nancy. (Nancy, 8vo.) N. R.
- Bull. Soc. N. Brunswick*.—Bulletin of the Natural History Society of New Brunswick. (St. John, 8vo.) N.
- Bull. Soc. Neuchatel*.—Bulletin de la Société des Sciences naturelles de Neuchatel. (Neuchatel, 8vo.) N. R. Z. C.
- Bull. Soc. Nimes*.—Bulletin de la Société d'étude des Sciences naturelles de Nimes. (Nimes, 8vo.) N.
- Bull. Soc. Nord France*.—Bulletin de la Société Linnéenne du Nord de la France. (Amiens.) N. K.
- Bull. Soc. Normand*.—Bulletin de la Société Linnéenne de Normandie. 4<sup>e</sup> Série. (Caen, 8vo.) N. Z. L. C.
- Bull. Soc. Ouest France*.—Bulletin de la Société des Sciences naturelles de l'Ouest de la France. (Paris & Nantes, 8vo.) N. (C) p.
- Bull. Soc. Oural*.—Bulletin de la Société ouralienne d'amateurs des sciences naturelles. (Ekathérinebourg, fo.) N.
- Bull. Soc. Philom.*.—Bulletin de la Société Philomathique de Paris. viii<sup>e</sup> Série. [Includes Comptes-rendus.] (Paris, 8vo.) N. R. Z.
- Bull. Soc. Reims*.—Bulletin de la Société d'Étude des Sciences naturelles de Reims. [Includes Comptes-rendus des réunions.] (Reims, 8vo.) N.
- Bull. Soc. Rouen*.—Bulletin de la Société des amis des Sciences naturelles de Rouen. (Rouen, 8vo.) N.
- Bull. Soc. Saone*.—Bulletins de la Société des Sciences naturelles de Saône-et-Loire. (Chalon-sur-Saône, 4to.) N. Z.
- Bull. Soc. Savoie*.—Bulletin de la Société d'histoire naturelle de Savoie. (Chambéry, 8vo.) N.
- Bull. Soc. Sci. Toulouse*.—Bulletin de la Société des Sciences physiques et naturelles de Toulouse. (Toulouse, 8vo.) N. R.
- Bull. Soc. Semur*.—Bulletin de la Société des Sciences historiques et naturelles de Semur (Côte-d'Or). 2<sup>e</sup> Série. (Semur, 8vo.) N.
- Bull. Soc. Vaudoise*.—Bulletin de la Société Vaudoise des Sciences naturelles. (Lausanne, 8vo.) N. R. Z. L. (C) g.
- Bull. Soc. Veneto-Trent*.—Bullettino della Società Veneto-Trentina di Scienze Naturali. (Padova, 8vo.) N.
- Bull. Soc. Washington*.—Bulletin of the Philosophical Society of Washington. (Washington, 8vo.) N. K. R. Z. L. (C) p.
- Bull. Soc. Yonne*.—Bulletin de la Société des Sciences historiques et naturelles de l'Yonne. (Auxerre, 8vo.) N.
- Bull. Soc. zool. France*.—Bulletin de la Société zoologique de France. (Paris, 8vo.) N. K. Z. L. C. O.

- § *Bull. Univ. Kansas*.—Bulletin of the University of Kansas. [Same as *Kansas quart. Series A, Science and Mathematics*, q. v.]
- Bull. U. S. Dep. Agric. Animal Ind.*.—U. S. Department of Agriculture. Bureau of Animal Industry. Bulletin. (Washington, 8vo.) N.
- Bull. U. S. Dep. Agric. Biol.*.—U. S. Department of Agriculture. Division of Biological Survey. (Washington, 8vo.) N. Z. R. O.
- Bull. U. S. Dep. Agric. Farmers*.—U. S. Department of Agriculture. Farmers' Bulletin. (Washington, 8vo.) N.
- Bull. U. S. Dep. Agric. Ent.*.—U. S. Department of Agriculture. Division of Entomology. Bulletin. (Washington, 8vo.) Nz. Z. C. O.
- Bull. U. S. Dep. Agric. Ent. tech.*.—U. S. Department of Agriculture. Division of Entomology. Technical series. (Washington, 8vo.) Nz. Z. C. O.
- Bull. U. S. Fish Comm.*.—Bulletin of the United States Fish Commission. (Washington, 8vo.) Nz. K. R. Z. L. O.
- Bull. U. S. Geol. Surv.*.—Bulletins of the United States Geological Survey. (Washington, 8vo.) Ng. K. R. Z. (C) p, g. O.
- Bull. U. S. Mus.*.—Bulletin of the United States National Museum. (Washington, 8vo.) N. K. R. Z. L. C, b, p. O.
- Bull. Washburn Lab.*.—Bulletin of the Washburn Laboratory of Natural History. (Topeka, 8vo.) N.
- Bull. Wisconsin Soc.*.—Bulletin of the Wisconsin Natural History Society. (Milwaukee, 8vo.) Z.
- § *Bull. Wisconsin Surv.*.—Wisconsin Geological and Natural History Survey. Bulletin. (Madison, 8vo.) N. C, p.
- Canad. Ent.*.—The Canadian Entomologist. (London, Canada, 8vo.) Nz. Z. L. C. O.
- Canad. Rec.*.—The Canadian Record of Science, including the proceedings of the Natural History Society of Montreal. (Montreal, 8vo.) N. R. L. C. O.
- CB. Ges. Anthropol.*.—Correspondenzblatt der deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. [Issued with *Arch. Anthropol.*, q. v.] (München, 4to.) R. O.
- CB. Iris*.—[Vide *Deutsche ent. Zeitschr. Lep.*]
- Cellule*.—La Cellule: Recueil de Cytologie et d'Histologie générale. (Lierre & Louvain, 4to.) K. R. L. C, b. O.
- Centrbl. Bakter.*.—Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Erste Abteilung: Medizinisch-hygienische Bakteriologie und tierische Parasitenkunde. (Jena, 8vo.) N. R. Z. C, p. O.
- § *Centrbl. Mineral.*.—Centralblatt für Mineralogie, Geologie und Paläontologie in Verbindung mit dem Neuen Jahrbuch für Mineralogie, Geologie und Paläontologie herausgegeben von M. Bauer, E. Koken, Th. Liebisch. (Stuttgart, 8vo.) Ng. K. R. C. O.
- Centrbl. Physiol.*.—Centralblatt für Physiologie unter Mitwirkung der Physiologischen Gesellschaft zu Berlin und des Physiologischen Clubs in Wien. (Berlin, 8vo.) (C) g. O.
- Česka Ak. Praze*, 4to. *Česká Akademie Císarě Františka Josěfa provědy, slovesnost a umění v Praze*. Třída II. (Praze, 4to.) N. (C) p.



- Circ. U. S. Dep. Agric. Ent.*—United States Department of Agriculture. Division of Entomology. Circular. Second series. (Washington, 8vo.) N.
- Coleopteriste*—Le Coléoptériste ou Répertoire des travaux sur les Coléoptères de l'Ancien-monde. (Paris, 8vo.)
- Colorado Coll. Stud.*—[Vide *Stud. Colorado Coll.*]
- Commis. geol. Portugal*—Comissão dos trabalhos geologicos de Portugal. Mémoires. (Lisboa, 4to.) Ng. O.
- § *Comm. Millport. Stat.*—Millport Marine biological Station. Communications. (Glasgow, 8vo.) N. C.
- Commun. geol. Portugal*—Comunicações da Comissão dos trabalhos geologicos de Portugal. (Lisboa, 8vo.) Ng. R. (C) p.
- Comun. Mus. Buenos Aires*—Comunicaciones del Museo nacional de Buenos Aires. (Buenos Aires, 8vo.) N.
- Congr. Zool.*—Congrès international de Zoologie. [Vide *P. Congr. Zool.*]
- Contr. Canad. Pal.*—Geological Survey of Canada. Contributions to Canadian Palæontology. (Ottawa, 8vo or 4to.) Ng. O.
- Contr. Lab. Pennsylv.*—Contributions from the Zoological Laboratory of the University of Pennsylvania. (Philadelphia, 8vo.) Nz
- C.R. Ac. Savoie*—[Vide *Mem. Ac. Savoie.*]
- C.R. Ac. Sci.*—Comptes-rendus hebdomadaires des Séances de l'Académie des Sciences. (Paris, 4to.) N. K. R. Z. L. C, p, y. O.
- C.R. Ass. Franc.*—Association française pour l'avancement des Sciences. Compte-rendu. (Paris, 8vo.) N. K. R. C.
- C.R. Soc. Biol.*—Comptes-rendus hebdomadaires des Séances et Mémoires de la Société de Biologie. Neuvième série. [Consists of Comptes-rendus and Mémoires.] (Paris, 8vo.) N. R. Z, C, y. O.
- C.R. Soc. Bordeaux*—[Vide *Pr.-verb. Soc. Bordeaux.*]
- C.R. Soc. geol. France*—Compte-rendu des séances de la Société géologique de France. [Issued with *Bull. Soc. geol. France*, q.v.]
- C.R. Soc. Helvet.*—Archives des Sciences physiques et naturelles. Compte-rendu des travaux . . . de la Société Helvétique des Sciences naturelles. (Genève, 8vo.) (C) p.
- C.R. Soc. Philom.*—Comptes-rendus sommaires de la Société philomathique de Paris. [Indexed in *Bull. Soc. Philom.*, q.v.] (Paris, 8vo.)
- C.R. Soc. Reims*—[Part of *Bull. Soc. Reims*, q.v.]
- C.R. Soc. St. Petersburg*—[Vide *Protok. St. Peterb. Obshch.*]
- § *Danmarks geol. Unders.*—Danmarks geologiske Undersøgelse. (Kjøbenhavn, 8vo.) Ng.
- Danske Selsk. Skr.*—Det Kongelige Danske Vinenskabernes Selskabs Skrifter. Naturvidenskabelig og matematisk Afdeling. (Kjøbenhavn, 8vo.) N. K. R. Z. L. (C) p.
- Denk. Ak. Wien*—Denkschriften der Kaiserlichen Akademie der Wissenschaften zu Wien. (Wien, 4to.) N. R. Z. L. C. O.
- Denk. Ges. Jena*—Denkschriften der medicinisch-naturwissenschaftlichen Gesellschaft zu Jena. (Jena, 4to.) N. R. Z. L. C. O.

- Ertes. Erdel. Mus.*—Értesítő az Erdélyi Múzeum-egylet. Orvos természetudományi szakosztályából. II. Természettudományi szak. [Bulletin of the Transylvanian Museum Society. Medico-natural-science section.] (Kolozsvár, 8vo.) N. R.
- Essex Natural.*—The Essex Naturalist: being the Journal of the Essex Field Club. (Chelmsford, 8vo.) N. R. Z. L. C, p.
- Etudes Ent.*—Études d'Entomologie: Faunes entomologiques, descriptions d'Insectes nouveaux ou peu connus. Par Charles Oberthur. (Rennes, 8vo.) Nz. Z.
- Evkon. Trencsen Eg.*—[Vide *Jahresh. Ver. Trencsen.*]
- Ezh. Mus. St. Petersb.*—Ezhegodnik zoologicheskago muzeya Imperatorskoj akademii nauk.—[Vide *Annuaire Mus. St. Petersb.*]
- Fauna*—"Fauna." Verein Luxemburger Naturfreunde. Mittheilungen aus den Vereinssitzungen. [Also called] "Fauna." Société des Naturalistes Luxembourgeois. Comptes-rendus des Séances. (Luxembourg, 8vo.) N.
- Fauna Stat. Neapel*—Fauna und Flora des Golfes von Neapel und der angrenzenden Meeres-Abschnitte, herausgegeben von der zoologischen Station zu Neapel. (Berlin, 4to.) Nz. K. R. Z. L. (C) b. O.
- Feuille Natural.*—Feuille des Jeunes Naturalistes. (Paris, 8vo.) Nz.
- Field*—The Field, the Farm, the Garden. The Country Gentleman's newspaper. (London.) Nz. Z. C.
- Field Club*—The Field Club, with which is incorporated "The Garner." (London, 8vo.) N. C. O.
- Field Columbian Mus. Publication*—[Vide *Field Mus. Ornithol.*—*Field Mus. Zool.*—etc.: there being in all six of these "series."]
- Field Mus. Ornithol.*—Field Columbian Museum Publication. Ornithological Series. (Chicago, 8vo.) N. K. R. Z. L. C.
- Field Mus. Rep.*—Field Columbian Museum Publication. Annual Report of the Director to the Board of Trustees. (Chicago, 8vo.) N. K. R. Z. L. C.
- Field Mus. Zool.*—Field Columbian Museum Publication. Zoological Series. (Chicago, 8vo.) N. K. R. Z. L. C.
- Földtani Kozl.*—Földtani Közlöny. [Geologische Mittheilungen. Zeitschrift der Ungarischen geologischen Gesellschaft.] (Buda Pest, 8vo.) Ng. K. R.
- Forh. Selsk. Christian.*—Forhandlinger i Videnskabs-Selskabet i Christiania. (Christiania, 8vo.) N. R. Z. (C) p. O.
- Forh. Skand. Naturf.*—Forhandlingar ved det Skandinaviska Naturforskaremötet. (Christiania, &c., 8vo.) N.
- Forschber. Plon*—Forschungsberichte aus der biologischen Station zu Plön. (Berlin, 8vo.) Nz. K. Z. (C) b. O.
- Forsch. Deutsch. Landesk.*—Forschungen zur deutschen Landes- und Volkskunde. (Stuttgart, 8vo.) N.
- Forstl. Zeitschr. München*—Forstlich-naturwissenschaftliche Zeitschrift. Zugleich Organ für die Laboratorien der Forstbotanik, Forstzoologie, forstlichen Chemie, Bodenkunde und Meteorologie in München. (München, 8vo.) N.
- Frelon*—Le Frelon, journal d'Entomologie. (Chateauroux, 8vo.) Nz. Z.

- Gefied. Welt*.—Die gefiederte Welt : Zeitschrift für Vogelliebhaber, -zucht und -händler. (Magdeburg, 4to.) Nz. Z.
- Geognost. Jahresh.*.—Geognostische Jahreshefte; herausgegeben im Auftrage des K. Bayerischen Staatsministeriums des Innern von der geognostischen Abtheilung des K. Bayer. Oberbergamtes in München. (Cassel, 8vo.) Ng. C.
- Geol. Foren. Stockholm Forh.*.—Geologiska Föreningens i Stockholm Föreläsningar. (Stockholm, 8vo.) Ng.
- Geol. Mag.*.—The Geological Magazine, or Monthly Journal of Geology; with which is incorporated "The Geologist." New series. (London, 8vo.) Ng. K. Z. L. C. O.
- Glas Srpska Ak.*.—Glas Srpska Kraljevska akademije. Prvi razred. (Beograd, 8vo.) N.
- Giorn. Soc. Palermo*.—Giornale di Scienze naturali ed economiche pubblicato per cura della Società di Scienze naturali ed economiche di Palermo. (Palermo, 4to.) N. R.
- Glasnik Naravod. druzt.*.—Glasnik hrvatskoga naravoslovnoga društva [Societas historico-naturalis Croatica]. (Zagreb, 8vo.) N. (C) p.
- Göteborgs Vetensk. Handl.*.—Göteborgs kongl. Vetenskaps och Vitterhets samhälles Handlingar. Ny Tidsföljd. (Göteborg, 8vo.) N. (C) p.
- Halifax Natural.*.—The Halifax Naturalist and Record of the scientific Society. (Halifax, 8vo.) N. C.
- Helios*.—Helios. Abhandlungen und monatliche Mittheilungen aus dem Gesamtgebiete der Naturwissenschaften. Organ des Naturwissenschaftlichen Vereins des Regierungsbezirks Frankfurt. (Berlin, 8vo.) N. R.
- Hist. Berwick. Club*.—History of the Berwickshire Naturalists' Club. (Alnwick, 8vo.) N. R. L.
- Hort. Soc. ent. Ross.*.—Hort. Societatis entomologicae Rossicae. [Called also] Trudni Russkago entomologicheskago obshchestva v St. Petersburg. (St. Petersburg, 8vo.) Nz. Z. L. C.
- Ibis*.—The Ibis: a Quarterly Journal of Ornithology. (London, 8vo.) Nz. Z. L. C. O.
- Illustr. Zeitschr. Ent.*.—[Vide *Allg. Zeitschr. Ent.*]
- Indian Mus. Notes*.—Indian Museum Notes. (Calcutta, 8vo.) Nz. R. Z. C.
- § *Informe Mus. Costa Rica*.—Museo nacional de Costa Rica. Informe. (San José, 8vo.) N. K.
- Insect World*.—The Insect World: a monthly magazine. [In the Japanese language.] (Gifu, 8vo.) Nz.
- Int. J. Anat.*.—Monthly International Journal of Anatomy and Physiology. [Also issued as] Journal international d'anatomie et de physiologie, [and as] Internationale Monatsschrift für Anatomie und Histologie. (Paris, Leipzig, London, 8vo.) K. R. C. O.
- Int. J. Micr.*.—The International Journal of Microscopy and Natural Science. (London, 8vo.) N. K. C.
- Int. Monatsschr. Anat.*.—[Vide *Int. J. Anat.*]

- Iris, Dresden*.—[Vide *Deutsche ent. Zeitschr. Lep.*]
- Irish Natural*.—The Irish Naturalist: a Monthly Journal of General Irish Natural History. (Dublin, 8vo.) N. K. Z. L. C.
- Izv. Obshch. Moskov.*—Известия Императорскаго обществa любителей естествознания, антропологии и этнографии состоящих при Императорском Московском Университете. (Moscow, 4to.) N.
- Izv. imp. ak. nauk.*—[Vide *Bull. Ac. St. Petersburg.*]
- § *Izv. Kaukas. Mus.*—Известия Кавказскаго Музея. (Tiflis, 8vo.) N. L.
- Izv. S. Petersburg. Lab.*—[Vide *Bull. Lab. St. Petersburg.*]
- Izv. Vost.-sibir.*—Известия Восточно-сибирскаго, отъѣла императорскаго русскаго географическаго обществa. (Irkutsk, 8vo.) N.
- Jaarb. Ak. Amsterdam*.—Jaarboek van de Koninklijke Akademie van Wetenschappen gevestigd te Amsterdam. (Amsterdam, 8vo.) N. R. Z. L. (C) p.
- Jaarb. Mijn. Ned. Oost-Ind.*.—Jaarboek van het Mijnwesen in Nederlandsch Oost-Indië. (Amsterdam, 8vo.) N.
- J. Ac. Philad.*.—Journal of the Academy of Natural Sciences of Philadelphia. (Philadelphia, 8vo.) N. R. Z. L. C. O.
- J. Agric. Soc. Engl.*.—The Journal of the Royal Agricultural Society of England. (London, 8vo.) K. R. Z. L. C. O.
- § *J. Agric. Soc. Guiana*.—Journal of the Royal agricultural and commercial Society of British Guiana [formerly called *Timehri*.] (Demerara, 8vo.) N. R. L.
- J. Agric. Soc. India*.—Proceedings and Journal of the Agricultural and Horticultural Society of India. (Calcutta, 8vo.) N.
- Jahrb. Ak. Erfurt*.—Jahrbücher der königlichen Akademie gemeinnütziger Wissenschaften zu Erfurt. Neue Folge. (Erfurt, 8vo.) N.
- Jahrb. geol. Landesanst. Berlin*.—Jahrbuch der königlich-preussischen geologischen Landesanstalt und Bergakademie zu Berlin. (Berlin, 8vo.) Ng. K. C.
- Jahrb. geol. Reichsanst.*.—Jahrbuch der kaiserlich-königlichen geologischen Reichsanstalt. (Wien, 8vo.) Ng. R. L. C, p, g. O.
- Jahrb. Hamburg. Anst.*.—Jahrbuch der Hamburgischen wissenschaftlichen Anstalten. [Consists of Jahresberichte and Abhandlungen. Also vide *Mt. Mus. Hamburg.*] (Hamburg, 8vo.) N. K. R. L. C.
- Jahrb. Mus. Karnten*.—Jahrbuch des naturhistorischen Lande-museums von Kärnten. (Klagenfurt, 8vo.) N. C.
- Jahrb. nassau. Ver.*.—Jahrbücher des nassauischen Vereins für Naturkunde. (Wiesbaden, 8vo.) N. K. L. C, p.
- Jahrb. Siebenburg. Karpath. Ver.*.—Jahrbuch des Siebenbürgischen Karpathen-Vereins. (Hermannstadt, 8vo.) N. R.
- Jahrb. Ungarn. geol. Anstalt.*.—[= *Magyar Föld. Int. Evkon.*, q.v.]
- Jahresber. Anat. Entwickl.*.—Jahresberichte über die Fortschritte der Anatomie und Entwicklungsgeschichte. (Jena, 8vo.) K. C.

- Jahresber. Bohm. Ges.*—Jahresbericht der Königlich-Böhmischen Gesellschaft der Wissenschaften. (Prag, 8vo.) N. R. L. (C) p.
- Jahresber. forst.-phan. Stat.*—Jahresbericht der forstlich-phänologischen Stationen Deutschlands. (Berlin, 8vo.) N.
- Jahresber. Ges. Gera*—Jahresbericht der Gesellschaft von Freunden der Naturwissenschaften in Gera. (Gera, 8vo.) N.
- Jahresber. Ges. Graubund.*—Jahres-Bericht der naturforschenden Gesellschaft Graubündens. (Chur, 8vo.) N. C.
- Jahresber. Ges. Hannover*—Jahresbericht der naturhistorischen Gesellschaft zu Hannover. (Hannover, 8vo.) L.
- Jahresber. Hamburg. Anst.*—[Forms part of *Jahrb. Hamburg. Anst.*, q.v.]
- Jahresber. Mus. Francisco-Car.*—Jahres-Bericht des Museums Francisco-Carolinum. (Linz, 8vo.) N.
- Jahresber. Physiol.*—Jahresbericht über die Fortschritte der Anatomie und Physiologie. (Bonn, 8vo.) K. R. C, y. O.
- Jahresber. Schlesisch. Ges.*—Jahres-Bericht der Schlesischen Gesellschaft für vaterländische Cultur. (Breslau, 8vo.) N. K. R. (C) p.
- Jahresber. Ungarn geol. Anstalt*—Jahresbericht der Kgl.-Ung. geologischen Anstalt. (Budapest, 8vo.) Ng. R. C.
- Jahresber. Ver. Braunschweig*—Jahresbericht des Vereins für Naturwissenschaft zu Braunschweig. (Braunschweig, 8vo.) N. R.
- Jahresber. Ver. Erdk. Dresden*—Jahresbericht des Vereins für Erdkunde zu Dresden. (Dresden, 8vo.) Ng. K. R.
- Jahresber. Ver. Magdeburg*—Jahresbericht und Abhandlungen des naturwissenschaftlichen Vereins in Magdeburg. (Magdeburg, 8vo.) N. R. (C) p.
- Jahresber. Ver. Mannheim*—Jahresbericht des Vereins für Naturkunde zu Mannheim. (Mannheim, 8vo.) N.
- Jahresber. Ver. Osnabruck*—Jahresbericht des naturwissenschaftlichen Vereins zu Osnabruck. (Osnabruck, 8vo.) N. R.
- Jahresber. Ver. Zwickau*—Jahresbericht des Vereins für Naturkunde zu Zwickau. (Zwickau, 8vo.) N.
- Jahresber. Westfal. Ver.*—Jahresbericht des Westfälischen Provinzial-Vereins für Wissenschaft und Kunst. (Münster, 8vo.) N. Z. L.
- Jahresh. Ver. Luneberg*—Jahreshefte des naturwissenschaftlichen Vereins für das Fürstentum Lüneberg. (Lüneberg, 8vo.) N.
- Jahresh. Ver. Trencsen.*—Jahresheft des naturwissenschaftlichen Vereines des Trencsener Komitates. [Called also] Évkönyve a Trencsén vármegyey Termeszettudományi egylet megbízásából. (Trencsen, 8vo.) N.
- Jahresh. Ver. Württemb.*—Jahreshefte des Vereins für vaterländische Naturkunde in Württemberg. (Stuttgart, 8vo.) N. K. R. Z. L. C.
- J. Anat. Physiol.*—Journal de l'Anatomie et de la Physiologie normales et pathologiques de l'homme et des animaux. (Robin.) (Paris, 8vo.) R. Z. C. O.
- J. Anat. Physiol. norm. path.*—The Journal of Anatomy and Physiology, normal and pathological. (London, 8vo.) Nz. K. R. Z. L. C, p, y. O.

- J. Asiat. Soc. Bengal*—Journal of the Asiatic Society of Bengal: Part II, Natural History, &c. (Calcutta, 8vo.) N. R. Z. L. C. O.
- J. Board Agric. London*—The Journal of the Board of Agriculture. (London, 8vo.) N. K. C.
- J. Bombay Asiat. Soc.*—Journal of the Bombay Branch of the Royal Asiatic Society. (Bombay, 8vo.) N. C.
- J. Bombay Soc.*—The Journal of the Bombay Natural History Society. (Bombay, 8vo.) N. Z.
- J. Ceylon Asiat. Soc.*—Journal of the Ceylon Branch of the Royal Asiatic Society. (Colombo, 8vo.) N. Z.
- J. China Asiat. Soc.*—Journal of the China Branch of the Royal Asiatic Society. (Shanghai, 8vo.) N. R. Z.
- J. Cincinnati Soc.*—Journal of the Cincinnati Society of Natural History. (Cincinnati, 8vo.) N. R. (C) p.
- J. Coll. Japan*—Journal of the College of Science, Imperial University, Japan. (Tôkyô, 4to.) N. R. Z. L. C, b, p. O.
- J. Conch.*—The Journal of Conchology. (Leeds, 8vo.) Nz. Z. L. C.
- J. Conchyl.*—Journal de Conchyliologie. (Paris, 8vo.) Nz. Z. C.
- J. E. Mitchell Soc.*—Journal of the Elisha Mitchell Scientific Society. (Raleigh, 8vo.) R.
- Jena. Zeitschr.*—Jenaische Zeitschrift für Naturwissenschaft, herausgegeben von der medizinisch-naturwissenschaftlichen Gesellschaft zu Jena. (Jena, 8vo.) N. K. R. Z. L. C, b, p, y. O.
- J. Essex lab.*—The journal of the Essex technical laboratories. ["Biology notes."] (Chelmsford, 8vo.) N.
- J. f. O.*—[=*J. Ornith.*, q.v.]
- J. Geol.*—The journal of Geology. A semi-quarterly Magazine of Geology and related Sciences. (Chicago, 8vo.) Ng. K.
- J. Hamilton Ass.*—Journal and proceedings of the Hamilton Association. (Hamilton, Ontario, 8vo.) N. R.
- J. Inst. Cornwall*—Journal of the Royal Institution of Cornwall. (Truro, 8vo.) N. R. Z.
- J. Inst. Jamaica*—Journal of the Institute of Jamaica. (Kingston, 8vo.) N. R. Z. L.
- J. int. Anat.*—Journal international d'anatomie et de physiologie. [Vide *Int. J. Anat.*]
- J. Isle Man Soc.*—Yn Lloar Mannínagh. The journal of the Isle of Man Natural History and Antiquarian Society. (Douglas, 8vo.) N.
- J. Leeward Isl.*—Agricultural Journal of the Leeward Islands. (St. John's, Antigua, 8vo.)
- J. Linn. Soc.*—Journal of the Linnean Society: Zoology. (London, 8vo.) Nz. K. R. Z. L. C, b, p. O.
- J. Liverp. Geol. Ass.*—Liverpool Geological Association: Journal. (Liverpool, 8vo.) Ng.
- J. London Coll. Soc.*—Journal of the City of London College Society, London. (Lewes, 8vo.)

- J. Malac.*—The journal of Malacology. (London, 8vo.) Nz.
- J. Mar. Biol. Ass.*—Journal of the Marine Biological Association of the United Kingdom. (Plymouth, 8vo.) N. K. R. Z. L. C, b. O.
- J. Mar. Zool.*—The Journal of Marine Zoology and Microscopy. (Jersey, 8vo.) Nz. Z. O.
- J. Morphol.*—Journal of Morphology. (Boston, U. S., 8vo.) K. R. Z. L. (C), b. O.
- J. N. Jersey Soc.*—Journal of the New Jersey Natural History Society. (Trenton, 8vo.) R. Z.
- J. Northampt. Soc.*—Journal of the Northamptonshire Natural History Society and Field Club. (Northampton, 8vo.) N.
- J. N. York Ent. Soc.*—Journal of the New York Entomological Society. (New York, 8vo.) Nz. Z.
- J. N. York Micr. Soc.*—Journal of the New York Microscopical Society. (New York, 8vo.) N. C.
- Johns Hopkins Univ. Circ.*—Johns Hopkins University Circulars. (Baltimore, 4to.) N. K. R. (C) p. O.
- J. Ornith.*—Journal für Ornithologie. Deutsches Centralorgan für die gesammte Ornithologie. (Leipzig, 8vo.) Nz. R. Z.
- J. Oxford Club*—Journal of the Oxford University Junior Scientific Club. (Oxford, 8vo.) N. O.
- J. Physiol.*—The Journal of Physiology. [Foster.] (Cambridge, 8vo.)
- J. Quekett Club*—The Journal of the Quekett Microscopical Club. (London, 8vo.) N. K. R. Z. L. C. O.
- J. R. Micr. Soc.*—Journal of the Royal Microscopical Society. (London, 8vo.) N. K. R. Z. L. C, p. O.
- J. R. Soc. N. S. Wales*—Journal and Proceedings of the Royal Society of New South Wales. (Sydney, 8vo.) N. K. R. Z. L. C, p. O.
- J. Sci. Lib.*—Jornal de Sciencias mathematicas, physicas et naturaes publicado sob os auspicios da Academia real das Sciencias de Lisboa. (Lisboa, 8vo.) N. R. Z. L. C.
- J. Straits Asiat. Soc.*—Journal of the Straits Branch of the Royal Asiatic Society. (Singapore, 8vo.) N. R. C.
- J. Trinidad Club*—Journal of the Trinidad Field Naturalists' Club. (Port of Spain, 8vo.) N. Z. L.
- § *J. trop. Medicine*—The Journal of tropical Medicine. (London, 4to.) N. (C) path.
- J. Victoria Inst.*—Journal of the Transactions of the Victoria Institute or Philosophical Society of Great Britain. (London, 8vo.) N. K. R. C.
- Kansas quart.*—The Kansas University quarterly. Series A, Science and Mathematics. (Lawrence, 8vo.) N. (C) p.
- Kansas Scient.*—The Kansas City Scientist [formerly "The Naturalist"]. (Kansas City, 8vo.) N.
- KB. Ver. Riga*—Korrespondenzblatt des Naturforscher-Vereins zu Riga. (Riga, 8vo.) N.

- K. Danske Selsk. Skr.*—[Vide *Danske Selsk. Skr.*]
- Kent Mag.*—The Kent Magazine. (Maidstone, 8vo.)
- Kew Bull.*—Royal Gardens, Kew. Bulletin of Miscellaneous Information. (London, 8vo.) K. R. Z. L. C.
- K. fysiografiska Sällskapet i Lund Handlingar* [published as part of *Acta Univ. Lund.*, q.v.]
- Kosmos polski.*—Kosmos czasopismo polskiego Towarzystwa przyrodników im Kopernika. (Lwowie [=Lemberg], 8vo.) N.
- Leopoldina*—Leopoldina: Amtliches Organ der k. Leopoldino-carolinischen deutschen Akademie der Naturforscher. (Halle, 4to.) N. R. Z. L. (C) p.
- Lioar Mannin.*—Yn Lioar Mannínagh. Published quarterly for the Isle of Man Natural History Society. N.
- Lund. Univ. Ars-skr.*—[= *Acta Univ. Lund.*, q.v.]
- Maandbl. Genoot. Amsterdam*—Maandblad voor Natuurwetenschappen uitgeven door de Sectie voor Natuurwetenschappen van het Genootschap ter bevordering van Natuur-, Genees- en Heelkunde te Amsterdam. (Amsterdam, 8vo.) N.
- Magyar Fold. int. evkon.*—A Magyar Királyi Földtani intézet évkönyve. [Annals of the Hungarian Royal Geological Bureau.] (Buda Pest, 8vo.) Ng. R.
- Mater. fizyogr. Kraj.*—[Vide *Sprawozd. Kom. Kraja.*]
- Mater. gheol. Kavkaza*—Materialul dlya gheologhiit Kavkaza. (Tiflis, 8vo.) Ng.
- Math. naturw. Ber. Ungarn*—Mathematische und naturwissenschaftliche Berichte aus Ungarn, &c. (Berlin and Budapest, 8vo.) N. K. (C) p.
- Math. term. Ert. Magyar Ak.*—Mathematikai és természettudományi Értesítő. Kiadja a Magyar Tudományos Akadémia. [Mathematics and Natural Science Intelligencer.] (Budapest, 8vo.) N. R.
- Math. term. Közlem. Magyar Ak.*—Mathematikai és természettudományi Közlemények vonatkozólag a hazai viszonyokra. Kiadja a Magyar tudományos Akadémia. [Mathematical and Natural Science communications relating to native topics. Published by the Magyar Academy of Natural Sciences.] (Budapest, 8vo.) N. R.
- Medd. Dansk Geol. For.*—Meddelelser fra Dansk geologisk forening. (Kjøbenhavn, 8vo.) Ng.
- Medd. Gronland*—Meddelelser om Grønland, udgione af Commissionen for Leddsen af de geologiske og geographiske Undersøgelser i Grønland. (Kjøbenhavn, 8vo.) N.
- Medd. Soc. Faun. Fenn.*—Meddelanden af Societas pro Fauna et Flora Fennica. (Helsingfors, 8vo.) N. R. L.
- Mel. biol.*—Mélanges biologiques [reprints from *Bull. Ac. St. Petersb.*]. N. K. Z.
- Mém. Ac. Angers*—Mémoires de l'Académie des sciences et belles-lettres d'Angers. Nouvelle période. (Angers, 8vo.) N.



- Mem. Ac. Barcel.*—Memorias de la Real Academia de Ciencias de Barcelona. (Barcelona, 4to.) N.
- Mem. Ac. Belgique*—Mémoires de l'Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique. (Bruxelles, 4to.) N. R. Z. L. (C) p. O.
- Mem. Acc. Bologna*—Memorie della R. Accademia delle Scienze dell' Istituto di Bologna. Memorie della Sezione delle Scienze naturali. (Bologna, 4to.) N. R. C.
- Mem. Acc. Lincei*—Atti della R. Accademia dei Lincei. Memorie della classe di Scienze fisiche, matematiche e naturali. (Roma, 4to.) N. K. R. L. C. O.
- Mem. Acc. Modena*—Memorie della Regia Accademia di Scienze, Lettere ed Arti in Modena. Serie II. (Modena, 4to.) N.
- Mem. Acc. Pont. Lincei*—Memorie della Pontificia Accademia dei nuovi Lincei. (Roma, 4to.) N.
- Mem. Acc. Torino*—Memorie della Reale Accademia delle Scienze di Torino. (Torino, 4to.) N. K. R. Z. L. C, p.
- Mem. Ac. Dijon*—Mémoires de l'Académie des Sciences, Arts et Belles-Lettres de Dijon. 4<sup>e</sup> Série. (Dijon, 8vo.) N. K. R. C.
- Mem. Ac. France*—Mémoires de l'Académie des Sciences de l'Institut de France. (Paris, 4to.) N. R. C.
- Mem. Ac. Lisboa*—Memorias da Academia real das Sciencias de Lisboa; classe de Sciencias mathematicas, physicas e naturaes. (Lisboa, 4to.) N. R.
- Mem. Ac. Lyon*—Mémoires de l'Académie des Sciences, Belles Lettres et Arts de Lyon. 3<sup>e</sup> Série. (Lyon, 8vo.) N. K. R. L. C.
- Mem. Ac. Madrid*—Memorias de la real Academia de Ciencias exactas, fisicas y naturales de Madrid. (Madrid, 8vo.) N. R. Z. O.
- Mem. Ac. Montpell.*—Académie des Sciences et Lettres de Montpellier. Mémoires de la section des Sciences. (Montpellier, 4to.) N. R. L. C.
- Mem. Ac. Savoie*—Mémoires de l'Académie des Sciences, Belles Lettres et Arts de Savoie [includes Comptes-rendus]. 4<sup>e</sup> Série. (Chambéry, 8vo.) N. C.
- Mem. Ac. St. Petersh.*—Zapiski Imperatorskoj akademii nauk. Mémoires de l'Académie impériale des Sciences de Saint-Petersbourg. VIII<sup>e</sup> série. (St. Petersbourg, 4to.) N. K. R. Z. L. C, p. O.
- Mem. Ac. Toulouse*—Mémoires de l'Académie des Sciences de Toulouse. ix<sup>e</sup> Série. (Toulouse, 8vo.) N. R. C.
- Mem. Ac. Vaucluse*—Mémoires de l'Académie de Vaucluse. (Avignon, 8vo.) N.
- Mem. Ac. Washington*—Memoirs of the National Academy of Sciences. (Washington, 4to.) N. R. Z. L. C, p. O.
- Mem. Amer. Ac.*—Memoirs of the American Academy of Arts and Sciences. (Cambridge, Mass., 4to.) N. K. R. Z. L. (C) p. O.

- Mem. Amer. Mus.*—Memoirs of the American Museum of Natural History. (New York, 4to.) N.
- Mem. Austral. Mus.*—Australian Museum, Sydney. Memoir. (Sydney, 8vo.) N. R. Z. L. O.
- Mem. Boston Soc.*—Memoirs of the Boston Society of Natural History (Boston, 4to.) N. R. Z. L. (C) p. O.
- Mem. Calif. Ac.*—Memoirs of the California Academy of Sciences. (San Francisco, 4to.) N. R. Z. L.
- Mem. Carta geol. Ital.* (8vo)—Memorie descrittive della carta geologica d' Italia. (Roma, 8vo.) Ng.
- Mem. carta geol. Ital.* (4to)—Memorie per servire alla descrizione della carta geologica d' Italia, pubblicate a cura del R. comitato geologico del Regno. (Firenze, 4to.) Ng.
- § *Mem. Chicago ent. Soc.*—Occasional memoirs of the Chicago entomological Society. (Chicago, 8vo.)
- Mem. Com. geol.*—Mémoires du Comité géologique [second title for *Trudui geol. Kom.*, q.v.].
- Mem. Com. geol. Espana*—Memorias de la Comisión del mapa geológico de España. (Madrid, 8vo.) Ng. R.
- Mem. Cour. Ac. Belgique* (8vo)—Mémoires couronnés et Mémoires des Savants étrangers publiés par l'Académie Royale des Sciences des Lettres et des Beaux-Arts de Belgique. (Bruxelles, 8vo.) N. R. Z. L. C, p.
- Mem. Cour. Ac. Belgique* (4to)—Mémoires couronnés et Mémoires des Savants étrangers publiés par l'Académie Royale des Sciences des Lettres et des Beaux-Arts de Belgique. (Bruxelles, 4to.) N. R. Z. L. C, p.
- Mem. geol. Surv. India*—Memoirs of the geological Survey of India. (Calcutta, 8vo.) Ng. R. Z. (C) p, g. O.
- Mem. geol. Surv. N. S. Wales*—Memoirs of the geological Survey of New South Wales. (Sydney, 4to.) Ng. R. L. C.
- Mem. geol. Surv. U. K.*—Memoirs of the geological Survey of the United Kingdom. (London, 8vo.) Ng. K. R. C. O.
- Mem. Inst. Egypt.*—Mémoires présentés à l'Institut Égyptien et publiés sous les auspices de S. A. Abbas Pacha, Khédive d'Égypte. (Le Caire, 4to.) N.
- Mem. Inst. Genev.*—Mémoires de l'Institut national Genevois. (Genève, 4to.) N. K. R. L. C.
- Mem. Ist. Lombardo*—Memorie del Reale Istituto Lombardo di Scienza e Lettere. Classe di scienze matematiche e naturali. (Milano, 4to.) N. K. R. C, p.
- Mem. Ist. Veneto*—Memorie del Reale Istituto Veneto di Scienze, Lettere ed Arti. (Venezia, 4to.) N. K. R. L. C.
- Mem. Johns Hopkins Univ.*—Memoirs from the Biological Laboratory of the Johns Hopkins University. (Baltimore, 4to.) Nz. O.
- Mem. Manchester Soc.*—Memoirs and Proceedings of the Manchester Literary and Philosophical Society. (Manchester, 8vo.) N. R. Z. L. C, p. O.

- § *Mem. Soc. geol. Nord*—Mémoires de la Société géologique du Nord. (Lille, 4to.) Ng. C.
- Mem. Soc. Hainaut*—Mémoires et Publications de la Société des Sciences, des Arts, et des Lettres du Hainaut. 7<sup>me</sup> Série. (Mons, 8vo.) N. R.
- Mem. Soc. ital.*—Memorie di matematica e di fisica della Società italiana delle Scienze. (Detta dei LX.) (Napoli, 4to.) N. R. (C) p.
- Mem. Soc. Kiev.*—[Vide *Zapiski Kiev. Obshch.*]
- Mem. Soc. Liege*—Mémoires de la Société royale des Sciences de Liège. (Bruxelles, 8vo.) N. K. R. L. C.
- Mem. Soc. Lille*—Mémoires de la Société des Sciences de l'Agriculture et des Arts de Lille. (Lille, 8vo.) N.
- Mem. Soc. malac. Belgique*—Mémoires. (Part of *Ann. Soc. malac. Belgique*, q.v.)
- Mem. Soc. Moscou*—Nouveaux Mémoires de la Société impériale des Naturalistes de Moscou. (Moscou, 4to.) N. K. R. C. p.
- Mem. Soc. Nord France*—Mémoires de la Société Linnéenne du Nord de la France. (Amiens, 8vo.) N.
- Mem. Soc. Normandie*—Mémoires de la Société Linnéenne de Normandie. (Caen, 4to.) N. Z. L. C.
- Mem. Soc. pal. Suisse*—[Vide *Abh. Schweiz. pal. Ges.*]
- Mem. Soc. Saone*—Mémoires de la Société des Sciences naturelles de Saône-et-Loire. (Chalon-sur-Saône, 4to.) N. Z.
- Mem. Soc. Seine et Oise*—Mémoires de la Société des Sciences naturelles et médicales de Seine-et-Oise. (Versailles, 8vo.) N. K.
- Mem. Soc. Toscana*—[Vide *Atti Soc. Toscana.*]
- Mem. Soc. zool. France*—Mémoires de la Société zoologique de France. (Paris, 8vo.) Nz. Z. L. C. O.
- Microgr. prep.*—Le Micrographe préparateur, journal de micrographie générale de technique micrographique et revue des journaux français et étrangers. (Paris, 8vo.) N.
- Miscell. ent.*—Miscellanea entomologica. (Narbonne, 8vo.) Z.
- Monit. Zool. ital.*—Monitore Zoologico italiano. (Firenze, 8vo.) Nz. Z. (C) b.
- Mon. U.S. Geol. Surv.*—Department of the Interior. Monographs of the United States Geological Survey. (Washington, 4to.) Ng. R. Z. (C) p. O.
- Morphol. Jahrb.*—Morphologisches Jahrbuch: eine Zeitschrift für Anatomie und Entwicklungsgeschichte. (Leipzig, 8vo.) Nz. K. R. Z. L. (C) b. O.
- Mt. Aargau. Ges.*—Mittheilungen der Aargauischen naturforschenden Gesellschaft. (Aarau, 8vo.) N. K. R.
- Mt. Ak. Berlin*—Mathematische und naturwissenschaftliche Mittheilungen aus den Sitzungsberichten der königlich-preussischen Akademie der Wissenschaften zu Berlin. [Comprises the nat. hist. portions of *SB. Ak. Berlin*, and bears the pagination of that periodical in addition to its own.] (Berlin, 8vo.) N. L. O.

- Mt. Schweiz. geol. Ges.*—[Vide *Eclog. geol. Helvet.*]
- Mt. Stat. Neapel*—Mittheilungen aus der zoologischen Station zu Neapel. (Berlin, 8vo.) Nz. K. R. Z. C, b. O.
- Mt. Ungar. geol. Anstalt*—Mittheilungen aus dem Jahrbuche der k. ungarischen geologischen Anstalt. [German edition of *Magyar Fold. int. evkon.*] (Budapest, 8vo.) Ng. R. (C) g.
- Mt. Ver. Erdk. Leipzig*—Mittheilungen des Vereins für Erdkunde zu Leipzig. (Leipzig, 8vo.) Ng. C.
- Mt. Ver. Frankfurt*—[Vide *Helios.*]
- Mt. Ver. Krain*—Mittheilungen des Musealvereines für Krain. Zweite Abtheilung: Naturkundlicher Theil. (Laibach, 8vo.) N.
- Mt. Ver. Steiermark*—Mittheilungen des naturwissenschaftlichen Vereines für Steiermark. (Graz, 8vo.) N. R. L.
- Mt. Ver. Vorpomm.*—Mittheilungen aus dem naturwissenschaftlichen Verein für Neu-Vorpommern und Rügen in Greifswald. (Berlin, 8vo.) N. K. C.
- Nachrbl. Deutsch. malak. Ges.*—Nachrichtenblatt der deutschen malakozoologischen Gesellschaft. (Frankfurt-a-M., 8vo.) Nz. Z. C.
- Nachr. Ges. Göttingen*—Nachrichten von der königl. Gesellschaft der Wissenschaften und der Georg Augusts Universität zu Göttingen. (Göttingen, 8vo.) N. R. Z. L. C, p. O.
- N. Acta Ac. L.-C. Nat. cur.*—[Vide *Acta Ac. German.*]
- N. Acta Soc. Upsal.*—[Vide *Acta Soc. Upsal.*]
- N. Arch. Mus. Paris*—[Vide *Arch. Mus. Paris.*]
- Nat. Hist. Tr. Northumb.*—Natural-history Transactions of Northumberland, Durham, and Newcastle-on-Tyne, being papers read at the meetings of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, and the Tyneside Naturalists' Field Club. (London & Newcastle, 8vo.) N. R. Z. L. C, p. O.
- Nat. Sci.*—Natural Science: a Monthly Review of Scientific Progress. (London & New York, 8vo.) N. K. Z. C, b. O.
- Naturæ nov.*—Naturæ novitates. [A bookseller's list.] (Berlin, Friedländer, 8vo.) Z. L. (C) p. O.
- Natural. Canad.*—Le Naturaliste Canadien. Bulletin de recherches, observations et découvertes se rapportant à l'histoire naturelle du Canada. (Chicoutimi, 8vo.) N. Z.
- Naturaleza*—La Naturaleza. Periódico científico de la Sociedad mexicana de Historia natural. Segunda serie. (Mexico, 4to.) N.
- Naturalist*—The Naturalist, a monthly journal of Natural History for the North of England. (London, 8vo.) N. R. Z. L. C.
- Naturaliste*—Le Naturaliste. (Paris, 8vo.) Nz. Z.
- Natural. J.*—The Naturalists' Journal. A monthly medium for Collectors and Students of Natural History. (London, 8vo.) N.
- Natural. Sicil.*—Il Naturalista Siciliano. Organo della Società dei Naturalisti Siciliani. (Palermo, 4to.) N. Z.

- Ofv. Ak. Forh.*—Öfversigt af k. Vetenskaps-Akademien. Förhandlingar. (Stockholm, 8vo.) N. R. Z. L. (C) p. O.
- Ofv. Finska Forh.*—Öfversigt af Finska Vetenskaps-Societetens Förhandlingar. (Helsingfors, 8vo.) N. R. Z. (C) p.
- Ornith. Centralbl.*—Ornithologisches Centralblatt. Organ für Wissenschaft und Praxis. Beiblatt zum Journal für Ornithologie. (Leipzig, 4to.)
- Ornith. Jahrb.*—Ornithologisches Jahrbuch. Organ für das palaarktische Faunengebiet. (Hallein, 8vo.) N. Z.
- Ornith. Monber.*—Ornithologische Monatsberichte: herausgegeben von Dr A. Reichenow. (Berlin, 8vo.) Nz. Z. C.
- Ornith. Monchr. Schutze*—Ornithologische Monatschrifte des deutschen Vereins zum Schutze der Vogelwelt. (Wurzburg, 8vo.) Nz. Z.
- Ornith. Ool.*—The Ornithologist and Oologist. (Hyde Park, Mass., 8vo.) Z.
- Ottawa Natural.*—The Ottawa Naturalist. The Transactions of the Ottawa Field-Naturalists' Club. (Ottawa, 8vo.) N. L.
- Ov. Danske Selsk.*—Oversigt over det k. Danske Videnskabernes Selskabs Forhandlinger. (Copenhagen, 8vo.) N. K. R. Z. C, p. O.
- P. Ac. Amsterdam*—Proceedings of the Royal Academy of Sciences, Amsterdam. [Translation of Versl. Ak. Amsterdam, q. v.] N. R. L. C, p.
- P. Ac. Philad.*—Proceedings of the Academy of Natural Sciences of Philadelphia. (Philadelphia, 8vo.) N. R. Z. L. C, b, p. O.
- P. Agric. Soc. India*—[Vide *J. Agric. Soc. India*.]
- Pal. Abh.*—Paläontologische Abhandlungen. (Jena, 4to.) Ng. K. O.
- Paläontogr.*—Paläontographica. Beiträge zur Naturgeschichte der Vorzeit. (Stuttgart, 4to.) Ng. R. C. O.
- Paläontogr. ital.*—Paläontographia italica. Memorie di Paleontologia pubblicate per cura del Prof. Mario Canavari. (Pisa, 4to.) Ng. C. O.
- Pal. Bull.*—Paläontological Bulletin. [Extracts from *P. Amer. Phil. Soc.*] (Philadelphia, 8vo.)
- Pal. franc.*—Paléontologie française ou description des fossiles de la France. (Paris, 8vo.) Ng. K. R.
- Pal. Ind.*—Paläontologia indica: [also with title *Memoirs of the Geol. Survey of India*, but a separate work from our *Mem. geol. Surv. Ind.*] (Calcutta, 4to.) Ng. R. Z. L. (C) p, g. O.
- § *Pal. Mon. Carte geol. Alger.*—Carte géologique de l'Algérie. Paléontologie Monographies. (Alger, 4to.) Ng.
- Pal. Soc. Mon.*—Paläontographical Society Monographs. (London, 8vo.) Ng. K. R. Z. L. (C) p. O.
- Pam. Ak. Krakow.*—Pamiętnik Akademii Umiejętności w Krakowie, Wydział matematyczno-przyrodniczy. (Krakowie, 4to.) N.
- P. Amer. Ac.*—Proceedings of the American Academy of Arts and Sciences. (Boston, 8vo.) N. K. R. Z. L. C, p. O.

- P. Dorset Club*—Proceedings of the Dorset natural history and antiquarian Field Club. (Dorchester, 8vo.) N. Z. L.
- P. Dublin Soc.*—The Scientific Proceedings of the Royal Dublin Society. New series. (Dublin, 8vo.) N. K. R. Z. L. C, p. O.
- P. Ealing Soc.*—[Vide *Rep. Ealing Soc.*]
- P. East Scotland Soc.*—Proceedings of the East of Scotland Union of Naturalists' Societies. (Perth, 8vo.) N.
- P. ent. Soc. London*—The Proceedings of the entomological Society of London. [Published with *Tr. ent. Soc. Lond.*] (London, 8vo.) Nz. R. Z. L. C, p. O.
- P. ent. Soc. Washington*—Proceedings of the entomological Society of Washington. (Washington, 8vo.) Nz Z.
- P. Folkestone Soc.*—Proceedings of the Folkestone natural history Society. (Folkestone, 8vo.) N.
- P. Geol. Ass.*—Proceedings of the Geologists' Association. (London, 8vo.) Ng. K. R. Z. (C) p. O.
- P. Hampsh. Club*—Papers and Proceedings of the Hampshire Field Club. (Southampton, 8vo.) N. C.
- Phil. Trans.*—Philosophical Transactions of the Royal Society of London. (London, 4to.) N. K. R. Z. L. C, p. O.
- P. Holmesdale Club*—Proceedings of the Holmesdale natural history Club. (London, 8vo.) N.
- P. Indiana Ac.*—Proceedings of the Indiana Academy of Science. (Brookville, 8vo.) N. Z.
- P. Inst. Trinidad*—Proceedings of the Victoria Institute of Trinidad. (Port-of-Spain, 8vo.) N.
- P. Iowa Ac.*—Proceedings of the Iowa Academy of Sciences. (Des Moines, 8vo.)
- P. Irish Ac.*—Proceedings of the Royal Irish Academy. Third series. (Dublin, 8vo.) N. R. Z. L. C, p. O.
- P. Linn. Soc. London*—Proceedings of the Linnean Society of London. (London, 8vo.) Nz. K. R. Z. L. C, p. O.
- P. Linn. Soc. N. S. Wales*—Proceedings of the Linnean Society of New South Wales. Second series. (Sydney, 8vo.) N. R. Z. L. C, b, p. O.
- P. Liverp. biol. Soc.*—Proceedings and Transactions of the Liverpool biological Society. (Liverpool, 8vo.) N. K. R. Z. (C) b.
- P. Liverp. Club*—Proceedings of the Liverpool Naturalists' Field Club. (Liverpool, 8vo.) N.
- P. Liverp. geol. Soc.*—Proceedings of the Liverpool geological Society. (Liverpool, 8vo.) Ng. R. C.
- P. Liverp. lit. Soc.*—Proceedings of the literary and philosophical Society of Liverpool. (London & Liverpool, 8vo.) N. Z. L. (C) p.
- P. London Amateur Soc.*—Proceedings of the London Amateur Scientific Society. Metropolitan Association and Society of Amateur Geologists. (London, 8vo.) N. K. C.
- P. Malac. Soc. London*—Proceedings of the Malacological Society of London. (London, 8vo.) N. K. Z. C.

- P. R. Soc. Edinb.*—Proceedings of the Royal Society of Edinburgh. (Edinburgh, 8vo.) N. R. Z. L. C, p. O.
- Pr.-verb. malac. Belgique*—Procès-verbaux des séances de la Société royale malacologique de Belgique. [Reappears later, with a different number to the volume, as *Bull. Soc. malac. Belgique*, q.v.] (Bruxelles, 8vo.) Nz. R. L.
- Pr.-verb. Soc. Belge Geol.*—[Vide *Bull. Soc. Belge Geol.*]
- § *Pr.-verb. Soc. Bordeaux.*—Procès-verbaux de la Société Linnéenne de Bordeaux. [Called also *Extraits des comptes rendus des Séances de la Soc. Linn. Bordeaux.*] (Bordeaux, 8vo.) N. Z. C.
- Pr.-verb. Soc. Toscana.*—Atti della Società Toscana di Scienze Naturali residente in Pisa. Processi verbali. [Vide *Atti Soc. Tosc.*] (Pisa, 8vo.) N.
- P. Scott. Micr. Soc.*—Proceedings of the Scottish Microscopical Society. (Edinburgh, 8vo.) (C) p.
- P. Soc. Montreal.*—[Vide *Canad. Rec.*]
- P. Soc. Queensland.*—Proceedings of the Royal Society of Queensland. (Brisbane, 8vo.) N. R. (C) p.
- P. Soc. Tasmania.*—Papers and Proceedings of the Royal Society of Tasmania. (Hobart, 8vo.) N. R. Z. L. (C) p.
- P. Soc. Victoria.*—Proceedings of the Royal Society of Victoria. New series. (Melbourne, 8vo.) N. K. R. L. C, b, p. O.
- P. Soc. Washington.*—Proceedings of the Biological Society of Washington. (Washington, 8vo.) N. Z. O.
- P. Somersetsh. Soc.*—Somersetshire archæological and natural history Society. Proceedings. New series. (Taunton, 8vo.) N. C.
- § *P. South London Soc.*—Proceedings of the South London entomological and Natural history Society. (London, 8vo.) N. L. C.
- Psyche*—Psyche, a Journal of Entomology. Published by the Cambridge Entomological Club. (Cambridge, U.S., 4to.) Nz. Z.
- § *Publ. Carnegie Mus.*—Publications of the Carnegie Museum. (Pittsburgh, 8vo.) N.
- Publ. Inst. Luxembourg.*—Publications de l'Institut grand-ducal de Luxembourg. Section des Sciences Naturelles et Mathématiques. (Luxembourg, 8vo.) N. R.
- Publ. Iowa Geol. Surv.*—Publications of the Iowa Geological Survey. (Des Moines, 4to.) C.
- § *P. Univ. Durham Soc.*—Proceedings of the University of Durham Philosophical Society. (Newcastle-upon-Tyne, 8vo.) C, p.
- P. U. S. Mus.*—Proceedings of the United States National Museum. (Washington, 8vo.) Nz. K. R. L. Z. C, b, p. O.
- P. Warwicksh. Club.*—Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club. (Warwick, 8vo.) N. R. L.
- P. Washington Ac.*—Proceedings of the Washington Academy of Sciences. (Washington, 8vo.) N. R. Z. L.
- P. Yorksh. geol. Soc.*—Proceedings of the Yorkshire geological and polytechnic Society. (Halifax, 8vo.) Ng. (C) p. O.

- Rep. Brit. Ass.*—Report of the British Association for the Advancement of Science. (London, 8vo.) N. K. R. Z. L. C, p. O.
- Rep. Canad. Inst.*—Annual Report of the Canadian Institute, being an appendix to the report of the Minister of Education, Ontario. (Toronto, 8vo.) N. R. L. (C) p.
- Rep. Cardiff Soc.*—Cardiff Naturalists' Society. Report and Transactions. (Cardiff, 8vo.) N. R. C.
- § *Rep. Cheltenham Coll. Soc.*—Cheltenham College Natural History Society. Report. (Cheltenham, 8vo.) N.
- Rep. Chester Soc.*—Chester Society of Natural Science and Literature. Annual Report. (Chester, 8vo.) N. L.
- Rep. Cornell Stat.*—Report of the Cornell University Experiment Station.
- Rep. Cornwall Soc.*—Royal Cornwall Polytechnic Society. Annual Report. (Falmouth, 8vo.) N. R. L. C.
- Rep. Dep. Agric. Brisbane*—Annual Report of the department of Agriculture. [Consists chiefly of *Bull. Dep. Agric. Brisbane*, q.v.] (Brisbane, 8vo.) N. O.
- Rep. Devon. Ass.*—Report and Transactions of the Devonshire Association for the advancement of Science. (Plymouth, 8vo.) N. K. R. L. C. O.
- Rep. Ealing Soc.*—Report and Proceedings of the Ealing Natural Science and Microscopical and Natural History Society. (Ealing, 8vo.) N. L.
- Rep. ent. Soc. Ontario*—Annual Report of the entomological Society of Ontario. (Toronto, 8vo.) Nz. Z. L. C. O.
- Rep. Epsom Soc.*—Epsom College Natural History Society. Report. (London, 8vo.) N.
- Rep. Felsted Soc.*—Report of the Felsted School scientific Society. (Chelmsford, 8vo.) N. L.
- Rep. Fish. Board Scotland*—Annual Report of the Fishery Board for Scotland. (Edinburgh, 8vo.) Nz.
- Rep. Geol. N. Zealand*—Colonial Museum and Geological Survey of New Zealand. Reports of Geological Explorations. (Wellington, 8vo.) Ng. R. Z.
- Rep. Geol. Surv. Canada*—Geological Survey of Canada. Annual Report. (Ottawa, 8vo.) Ng. K. R. Z. L. C, p.
- § *Rep. geol. Surv. India*—General Report of the work carried on by the geological Survey of India. (Calcutta, 8vo.) Ng. R. Z. L. C, p. O.
- Rep. Geol. Surv. Iowa*—Iowa Geological Survey. Annual Report. (Des Moines, 8vo.) Ng. (C) p.
- § *Rep. geol. Surv. New Jersey*—Geological Survey of New Jersey. Annual Report of the State geologist. (Trenton, 8vo.) Ng. K.
- Rep. Geol. Surv. Texas*—Annual Report of the Geological Survey of Texas. (Austin, 8vo.) Ng.
- Rep. Guernsey Soc.*—Guernsey Society of Natural Science and Local Research. Report and Transactions. (Guernsey, 8vo.) N.
- Rep. Indiana Geol.*—Indiana, Department of Geology and Natural Resources. Annual Report. (Indianapolis, 8vo.) Ng.



LIST OF ABBREVIATIONS.

xlvii

- Rep. Ins. Illinois*—Report of the State Entomologist on the Noxious and Beneficial Insects of the State of Illinois. (Springfield, 8vo.) Nz.
- Rep. Liverp. Ass.*—Liverpool Science Students' Association. Annual Report and Proceedings. (Liverpool, 8vo.) N.
- Rep. Marlbor. Soc.*—Report of the Marlborough College natural history Society. (Marlborough, 8vo.) N. L.
- Rep. Mus. Ass.*—Museums Association. Report of Proceedings, with the papers read....(No place of publication, 8vo.) N. O.
- Rep. Mus. Harvard*—Annual report of the Curator of the Museum of Comparative Zoölogy at Harvard College to the President and Fellows of Harvard College. (Cambridge, Mass., 8vo.) Nz. R. Z. L. (C) p. O.
- Rep. Mus. Milwaukee*—Annual Report of the Board of Trustees of the Public Museum of the City of Milwaukee. (Milwaukee, 8vo.) N. O.
- Rep. North Staffordsh. Club*—North Staffordshire Naturalists' Field Club and Archæological Society. Annual Report and Transactions. (Newcastle-under-Lyme, 8vo.) N.
- Rep. N. York Mus.*—University of the State of New York. New York State Museum. Annual Report of the Regents. (Albany, 8vo.) Ng. K. R. L.
- Rep. Penzance Soc.*—Penzance natural history and antiquarian Society. Report and Transactions. (Plymouth, 8vo.) N. L.
- Rep. Plymouth Inst.*—Annual Reports and Transactions of the Plymouth Institution and Devon and Cornwall natural history Society. (Plymouth, 8vo.) N. R. Z. L.
- Rep. Rugby Soc.*—Report of the Rugby School natural history Society. (Rugby, 8vo.) N. L. (C) p.
- Rep. Secr. Agric.*—Report of the Secretary of Agriculture. (Washington, 8vo.)
- § *Rep. S. E. Union Soc.*—Report and Transactions of the South Eastern Union of Scientific Societies. (London, 8vo.) N. C.
- Rep. S. London Club*—Annual Report of the South London Microscopical and Natural History Club. (?place of publication, 8vo.) N.
- Rep. Smithsonian Inst.*—Annual Report of the Board of Regents of the Smithsonian Institution. (Washington, 8vo.) [Videque *Rep. U. S. Mus.*] N. K. R. Z. L. C, b, p. O.
- Rep. Southport Soc.*—The...Report of the Southport Society of Natural Science. (Southport, 8vo.) N.
- Rep. Surv. Minnesota*—The Geological and Natural History Survey of Minnesota. Annual Report. (Minneapolis, 4to.) Ng. Z. C. O.
- Rep. U. S. Dep. Agric. Animal Ind.*—U. S. Department of Agriculture. Annual Report of the Bureau of Animal industry. (Washington, 8vo.) N.
- Rep. U. S. Fish. Comm.*—United States Commission of Fish and Fisheries. Report of the Commissioner. (Washington, 8vo.) Nz. K. R. Z. (C) b. O.
- Rep. U. S. Geol. Surv.*—Annual Report of the United States Geological Survey to the Secretary of the Interior. (Washington, 8vo.) Ng. R. Z. L. C, p. O.

- Rep. U. S. Mus.*—Annual Report of the Board of Regents of the Smithsonian Institution. Report of the U. S. National Museum. (Washington, 8vo.) N. K. R. Z. L. C, p. O.
- Rep. Wellington Soc.*—Annual Report of the Wellington College Natural Science Society. (Wellington, 8vo.) N.
- Rep. Yorksh. Soc.*—Annual Report of the Council of the Yorkshire Philosophical Society. (York, 8vo.) N. R. C.
- Rep. Yorksh. Union*—[Included in *Tr. Yorksh. Union*.]
- Rev. biol. Nord. France*—Revue biologique du Nord de la France. (Lille, 8vo.) N. K. Z. L. (C) b. O.
- Rev. Ent. franc.*—Revue d'Entomologie publiée par la Société française d'Entomologie. (Caen, 8vo.) Nz. Z.
- Rev. gen. Sci.*—Revue générale des Sciences pures et appliquées. (Paris, 8vo.) R. K.
- Revist. Argent.*—Revista Argentina de Historia Natural. (Buenos Aires, 8vo.) N. R. Z.
- Revist. chilena*—Revista Chilena de Historia natural. Órgano del Museo de Valparaíso. [Boletín del Museo de Valparaíso is issued with this, but with a separate pagination.] (Valparaíso, 8vo.) N. Z.
- Revist. Jard. Buenos Ayres*—Revista del Jardín Zoológico de Buenos Ayres. (Buenos Ayres, 8vo.) N.
- Revist. Mus. La Plata*—Revista del Museo de La Plata. (La Plata, 8vo.) N. R. O.
- Revist. Mus. Paulista*—Revista do Musai Paulista publicada por H. von Ihering. (S. Paulo, 8vo.) N. Z.
- Revist. Mus. Rio Jan.*—Revista do Museu nacional do Rio de Janeiro. [Formerly Arch. Mus. Rio Jan.] (Rio de Janeiro, 4to.) N. R. L. (C) p. O.
- Revist. Soc. Ribeiro*—Revista de Sciencias naturaes e sociaes, orgão dos Trabalhos da Sociedade Carlos Ribeiro. (Porto, 8vo.) L.
- Revist. Univ. Venezuela*—Revista científica de la Universidad Central de Venezuela. (Caracas, 4to.) N. L.
- Rev. Mus. Pays-bas*—Muséum d'histoire naturelle des Pays-bas. Revue méthodique et critique des collections déposées dans cet établissement. (Leide, 8vo.) Nz. Z. O.
- Rev. paleozool.*—Revue critique de Paléozoologie. (Paris, 8vo.) Ng.
- Rev. Quest. Sci.*—Revue des Questions scientifiques. Publiée par la Société scientifique de Bruxelles. (Bruxelles, 8vo.) N.
- Rev. Sci. Bourbonnais*—Revue scientifique du Bourbonnais et du centre de la France. (Moulins, 8vo.) N.
- Rev. Scient.*—Revue Scientifique. [Revue rose.] (Paris, 4to.) K. R. C. O.
- Rev. Sci. nat. appl.*—Revue des sciences naturelles appliquées. Bulletin bimensuel de la Société nationale d'acclimatation de France. (Paris, 8vo.) Z.
- Rev. Sci. Nat. Ouest*—Revue des Sciences Naturelles de l'Ouest. (Paris, 8vo.) N.

- SB. Ges. München*—Sitzungsberichte der Gesellschaft für Morphologie und Physiologie in München. (München, 8vo.) N. L. C.
- SB. Ges. naturf. Berlin*—Sitzungsberichte der Gesellschaft naturforschender Freunde zu Berlin. (Berlin, 8vo.) N. Z. (C) p. O.
- SB. Ges. Wien*—[Vide *Verh. Ges. Wien*.]
- SB. Ges. Würzburg*—Sitzungsberichte der physikalisch-medicinischen Gesellschaft zu Würzburg. (Würzburg, 8vo.) N. K. R. Z. L. C, p. O.
- SB. niederrhein. Ges.*—Sitzungsberichte der niederrheinischen Gesellschaft für Natur- und Heilkunde. (Bonn, 8vo.) N. Z. L. C. O.
- SB. Soc. Erlangen*—Sitzungsberichte der physikalisch-medicinischen Societät zu Erlangen. (München, 8vo.) N. R.
- SB. Ver. Karlsruhe*—[Vide *Verh. Ver. Karlsruhe*.]
- Schr. Ges. Danzig*—Schriften der naturforschenden Gesellschaft in Danzig. Neue Folge. (Danzig, 8vo.) N. K. R. Z. C, p. O.
- Schr. Ges. Königsb.*—Schriften der physikalisch-ökonomischen Gesellschaft zu Königsberg in Preussen. [Consists of Abhandlungen and Sitzungsberichte.] (Königsberg, 4to.) N. R. L. C, p.
- Schr. Ges. Marburg*—Schriften der Gesellschaft zur Beförderung der gesamten Naturwissenschaften zu Marburg. (Marburg, 8vo.) N. K. R. O.
- Schr. Ver. Harzes*—Schriften des naturwissenschaftlichen Vereins des Harzes in Wernigerode. (Wernigerode, 8vo.) N.
- Schr. Ver. Schleswig-Holst.*—Schriften des naturwissenschaftlichen Vereins für Schleswig-Holstein. (Kiel, 8vo.) N. R. C.
- Science*—Science: a weekly journal. New series. (New York, 4to.) N. K. Z. L. (C) b. O.
- Sci. Gossip*—Science-Gossip, an illustrated monthly record of Nature and country-lore. New series. (London, folio.) N. K. Z. L.
- Sci. P. R. Dublin Soc.*—[Vide *P. Dublin Soc.*]
- S.-East. Natural.*—The South-eastern Naturalist. (Canterbury, 8vo.) N.
- Skript. Vid. Christiania*—Skifter udgivne af Videnskabselskabet i Christiania. (Kristiania, 8vo.) N. R.
- Smithson. Collect.*—Smithsonian Miscellaneous Collections. (Washington, 8vo.) N. K. R. Z. L. C, b, p.
- Smithson. Contr.*—Smithsonian Contributions to Knowledge. (Washington, 4to.) N. K. R. Z. L. C, p.
- Smithson. Rep.*—[Vide *Rep. Smithson. Inst.*]
- Soc. ent.*—Societas entomologica. Organ für den internationalen Entomologen-Verein. (Zurich, 4to.) Nz. Z.
- Soc. Pyrenees-or.*—Société agricole, scientifique et littéraire, des Pyrénées-orientales. (Perpignan, 8vo.) N.
- § *Special Bull. U. S. Mus.*—Smithsonian Institution. United States National Museum. Special Bulletin. (Washington, 4to.) N. K. L. (C) p. O.
- Spom. Srpska Ak.*—Srpska Kral'evska Akademija. Spomenik. (Beograd = Belgrade, 4to.) N. R.

- Timchri.* [Vide *J. agric. Soc. Guiana.*] Journal of the Royal Agricultural and Commercial Society of British Guiana. (Demerara, 8vo.) N. R. L.
- Tr. Ac. St. Louis*—The Transactions of the Academy of Science of St. Louis. (St. Louis, 8vo.) N. K. R. Z.
- Tr. Albany Inst.*—Transactions of the Albany Institute. (Albany, U.S., 8vo.) N. R.
- Tr. Amer. ent. Soc.*—Transactions of the American entomological Society. (Philadelphia, 8vo.) Nz. Z. L. C.
- Tr. Amer. Micr. Soc.*—Transactions of the American microscopical Society. (Buffalo, 8vo.) N.
- Tr. Amer. phil. Soc.*—Transactions of the American philosophical Society. (Philadelphia, 8vo.) N. R. Z. L. C, p. O.
- Tr. Asiatic Soc. Japan*—Transactions of the Asiatic Society of Japan. (Yokohama, 8vo.) N. R. Z. C. O.
- Tr. Ass. Meriden*—Proceedings and Transactions of the Scientific Association, Meriden, Conn. (Meriden, 8vo.) R.
- Trav. geol. St. Petersb.*—Travaux de la section géologique du cabinet de sa Majesté. (Ministère de la maison de l'Empereur) [called also *Trudui geologicheskoi chasti Kabineta imperatorskagho velichestva*]. (St. Petersburg, 8vo.) Ng. R.
- Trav. Inst. Lille*—Travaux et Mémoires des facultés de Lille. (Lille, 8vo.) R. L. (C) p.
- § *Trav. Lab. geol. Grenoble*—Travaux du laboratoire de géologie de la faculté des sciences de l'Université de Grenoble. (Grenoble, 8vo.) Ng.
- Trav. Lab. histol. France*—École pratique des Hautes Études. Laboratoire d'histologie du Collège de France. (Paris, 8vo.) R. C. O.
- Trav. Lab. Soie*—Travaux du laboratoire d'études de la Soie. (Lyon, 8vo.)
- Trav. Soc. St. Petersb.*—[Includes two Zoological sections, viz., *Trudui St. Peterb. Obshch.*, and *Protok. St. Peterb. Obshch.*, qq.v.]
- Trav. Soc. Univ. Kharkov.*—[Vide *Trudui Kharkov. Univ.*]
- Trav. Soc. Varsovie*—Travaux de la Société des Naturalistes de Varsovie. Comptes-rendus de la section biologique. [Vide *Protok. Obshch. Varshav.* and *Trudui Obshch. Varshav.*]
- Trav. Stat. Zool. Wimereux*—Travaux de la Station zoologique de Wimereux. (Paris, 4to.) Nz. K. O.
- Tr. Burton Soc.*—Transactions of the Burton-on-Trent Natural History and Archæological Society. (London, 8vo.) N.
- Tr. Cambridge Soc.*—Transactions of the Cambridge philosophical Society. (Cambridge, 4to.) N. K. R. L. Z. C, p. O.
- Tr. Canad. Inst.*—Transactions of the Canadian Institute. (Toronto, 8vo.) N. R. L. (C) p.
- Tr. City London Soc.*—Transactions of the City of London entomological and natural history Society. (London, 8vo.) N.
- Tr. Connect. Ac.*—Transactions of the Connecticut Academy of Arts and Sciences. (New Haven, 8vo.) N. R. Z. L. (C) p. O.
- Tr. Croydon Club*—[Vide *P. Croydon Club.*]

- Tr. Cumberland Ass.*—Transactions of the Cumberland Association for the Advancement of Literature and Science. (Carlisle, 8vo.) N. L. C.
- Tr. Dublin Soc.*—The Scientific Transactions of the Royal Dublin Society. (Dublin, 4to.) N. K. R. Z. L. (C) p. O.
- Tr. Dumfries Soc.*—The Transactions and Journal of Proceedings of the Dumfriesshire and Galloway natural history and antiquarian Society. (Dumfries, 8vo.) N. L.
- Tr. Eastbourne Soc.*—Transactions of the Eastbourne natural history Society. (Eastbourne, 8vo.) N. R.
- Tr. Edinb. Field Soc.*—Transactions of the Edinburgh Field Naturalists' and Microscopical Society. (Edinburgh, 8vo.) N.
- Tr. Edinb. geol. Soc.*—Transactions of the Edinburgh geological Society. (Edinburgh, 8vo.) Ng. R. C.
- Tr. E. Kent Soc.*—Transactions of the East Kent natural history Society. New series. (Canterbury, 8vo.) N.
- Trencaen term. Evkon.*—[Vide *Jahresh. Ver. Trencaen.*]
- Tr. ent. Soc. London*—The Transactions of the entomological Society of London. [Includes *Proceedings.*] (London, 8vo.) Nz. R. Z. L. C, p. O.
- Tr. geol. Soc. Austral.*—Transactions of the geological Society of Australasia. (Melbourne, 4to.) Ng. R.
- Tr. geol. Soc. Cornwall*—Transactions of the Royal geological Society of Cornwall. (Penzance, 8vo.) Ng. R. C. O.
- Tr. geol. Soc. Glasgow*—Transactions of the geological Society of Glasgow. (Glasgow, 8vo.) Ng. C, p.
- Tr. Guernsey Soc.*—[Vide *Rep. Guernsey Soc.*]
- Tr. Hertfordsh. Soc.*—Transactions of the Hertfordshire natural history Society and Field Club. (London, 8vo.) N. R. Z. L. C.
- § *Tr. Hull Club*—Transactions of the Hull Scientific and Field Naturalists' Club. (Hull, 8vo.) N.
- § *Tr. Hull. Geol. Soc.*—Transactions of the Hull geological Society. (Hull, 8vo.) Ng.
- Tr. Inverness Soc.*—Transactions of the Inverness Scientific Society and Field Club. (Inverness, 8vo.) N.
- Tr. Irish Ac.*—The Transactions of the Royal Irish Academy. (Dublin, 4to.) N. R. Z. L. C, p. O.
- Tr. Kansas Ac.*—Transactions of the Kansas Academy of Science. (Topeka, 8vo.) N. R. L.
- Tr. Leeds Club*—Transactions of the Leeds Naturalists' Club. (Leeds, 8vo.) N.
- Tr. Leeds Geol. Ass.*—Transactions of the Leeds Geological Association. (Leeds, 8vo.) Ng.
- Tr. Leicester Soc.*—Transactions of the Leicester Literary and Philosophical Society. New quarterly series. (Leicester, 8vo.) N. K. L.
- Tr. Lincoln Un.*—The Transactions of the Lincolnshire Naturalists' Union. (Louth, 8vo.)

- Tr. Linn. Soc. London.*—The Transactions of the Linnean Society of London. Second series. Zoology. (London, 4to.) N. K. R. Z. L. C, b, p. O.
- Tr. Liverp. biol. Soc.*—[Vide *P. Liverp. biol. Soc.*]
- Tr. Manchester Geol. Soc.*—Transactions of the Manchester Geological Society. (Manchester, 8vo.) Ng. R. C. O.
- Tr. Manchester Micr. Soc.*—Manchester Microscopical Society. Transactions and Annual Report. (Manchester, 8vo.) N. R.
- Tr. Maryland Ac.*—Transactions of the Maryland Academy of Sciences. (Baltimore, 8vo.) N.
- Tr. Norfolk Soc.*—Transactions of the Norfolk and Norwich Naturalists' Society. (Norwich, 8vo.) N. Z. L. C.
- Tr. Northern Ass.*—Transactions of the Northern Association of Literary and Scientific Societies. (Inverness, &c., 8vo.) N.
- Tr. Nottingham Soc.*—Nottingham Naturalists' Society. Transactions and Annual Report. (Nottingham, 12mo.) N. L.
- Tr. N. York Ac.*—Transactions of the New York Academy of Sciences. (New York, 8vo.) N. K. R. Z. L. (C) p.
- Tr. N. Zealand Inst.*—Transactions and Proceedings of the New Zealand Institute. (Wellington, 8vo.) N. K. R. Z. L. C, p. O.
- Tromsø Mus. Aarsb.*—Tromsø Museums Aarshefter. (Tromsø, 8vo.) N. R.
- Tr. Ottawa Club*—[Vide *Ottawa Natural.*]
- Tr. Ottawa Soc.*—Transactions of the Ottawa Literary and Scientific Society. (Ottawa, 8vo.) (C) p.
- Tr. Oxford Club*—Transactions of the Oxford University Junior Scientific Club. (Oxford, 8vo.) N. O.
- Tr. Perthsh. Soc.*—Transactions and Proceedings of the Perthshire Society of Natural Science. (Perth, 8vo.) N.
- Tr. Rochdale Soc.*—Transactions of the Rochdale Literary and Scientific Society. (Rochdale, 8vo.) N.
- Tr. R. Soc. Canada*—Proceedings and Transactions of the Royal Society of Canada (second series). (Ottawa, 4to.) N. K. R. Z. L. C, p. O.
- Tr. R. Soc. Edinb.*—Transactions of the Royal Society of Edinburgh. (Edinburgh, 4to.) N. R. Z. L. C, b, p. O.
- Tr. R. Soc. S. Austral.*—Transactions of the Royal Society of South Australia. (Adelaide, 8vo.) N. R. Z. L. (C) p.
- Tr. R. Soc. Victoria*—Transactions of the Royal Society of Victoria. (Melbourne, 4to.) N. K. R. L. C, p. O.
- Tr. S. African Soc.*—Transactions of the S. African Philosophical Society. (Cape Town, 8vo.) N. K. R. Z. L. C, p. O.
- § *Tr. Scottish N. H. Soc.*—Transactions of the Scottish Natural History Society. (Edinburgh, 8vo.) Z.
- Tr. Shropsh. Soc.*—Transactions of the Shropshire Archæological and Natural History Society. (Shrewsbury, 8vo.) N.

- Tr. Soc. Glasgow*.—Transactions of the Natural History Society of Glasgow (including the proceedings of the Society). New series. (Glasgow, 8vo.) N. Z. L. C. O.
- Tr. Stirling Soc.*—Stirling Natural History and Archaeological Society Transactions. (Stirling, 8vo.) N.
- Tr. Texas Ac.*—Transactions of the Texas Academy of Science. (Austin, 8vo.) N. (C) p.
- Trudui geol. Kab.*—[Vide *Trav. geol. St. Petersb.*]
- Trudui geol. Kom.*—Trudui geologicheskagho Komiteta. [Called also] Mémoires du comité géologique. (St. Pétersbourg, 4to.) Ng. R.
- Trudui Kazan. Univ.*—Trudui obshchestva estestvoispuitatelei pri Imperatorskom Kazanskom Universitete. (Kazan, 8vo.) N.
- Trudui Kharkov. Univ.*—Trudui obshchestva ispuitatelei prirodiu Imperatorskom Kharkovskom Universitete. [Called also] *Trav. Soc. Univ. Kharkov.* (Kharkov, 8vo.)
- Trudui Obshch. Varshav.*—Trudui obshchestva estestvoispuitatelei pri Imperatorskom Varshavskom Universitete. [Called also] Travaux de la Société des Naturalistes de Varsovie. (Warsaw, 8vo.) N.
- Trudui Russkagh. est. Obshch. St. Peterb.*—Trudui Russkagho entomologhicheskagho obshchestva v St. Peterburg [= *Horæ Soc. ent. Ross.*, q. v.]
- Trudui St. Peterb. Obshch.*—Trudui S.-Peterburghskagho obshchestva estestvoispuitatelei. Otdyelenie Zoologii i Fisiologii. [Called also] Travaux de la Société des Naturalistes de St. Pétersbourg. Section de Zoologie et de Physiologie. (St. Petersburg, 8vo.) N.
- Tr. Wagner Inst.*—Transactions of the Wagner Free Institute of Science of Philadelphia. (Philadelphia, 8vo.) N. K. R. (C) p. O.
- § *Tr. Weardale Club.*—Weardale Naturalists' Field Club. Transactions. (Bishop Auckland, 8vo.) N.
- Tr. Wisconsin Ac.*—Transactions of the Wisconsin Academy of Sciences, Arts, and Letters. (Maddison, 8vo.) N. R. (C) p. O.
- Tr. Woolhope Club.*—Transactions of the Woolhope Naturalists' Field Club. (Hereford, 8vo.) N. L. C.
- Tr. Forksh. Union*—The Transactions of the Yorkshire Naturalists' Union. (Leeds, 8vo.) N. Z. C.
- Tr. Zool. Soc. London*—Transactions of the Zoological Society of London. (London, 4to.) Nz. K. R. Z. L. C, p. O.
- Tufts Coll. Stud.*—Tufts College Studies. (Tufts Coll., Mass., 8vo.) Nz. R. (C) b, p.
- Verh. Ak. Amsterdam*—Verhandelingen der koninklijke Akademie van Wetenschappen. Tweede Sectie. (Amsterdam, 4to.) N. K. R. Z. L. C, p.
- Verh. Anat. Ges.*—Verhandlungen der anatomischen Gesellschaft [published with *Anat. Anz.*, q.v.] Nz. K. Z. (C) b. O.
- Verh. Berlin. Ges. Anthropol.*—Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte [published with *Zeitschr. Ethnol.*] (Berlin, 8vo.)
- Verh. Deutsch. zool. Ges.*—Verhandlungen der deutschen zoologischen Gesellschaft. (Leipzig, 8vo.) Nz. Z. C. O.

- Verh. geol. Reichsanst.*—Verhandlungen der kaiserlich-königlichen geologischen Reichsanstalt. (Wien, 8vo.) Ng. R. L. C, p. O.
- Verh. Ges. Basel*—Verhandlungen der naturforschenden Gesellschaft in Basel. (Basel, 8vo.) N. R. Z. L. C. O.
- Verh. Ges. deutsch. Naturf.*—Verhandlungen der Gesellschaft deutscher Naturforscher und Ärzte. Erster Theil, Die allgemeinen Sitzungen; Zweiter Theil, Abtheilungs-Sitzungen. (Leipzig, 8vo.) N. C. O.
- Verh. Ges. Wien*—Verhandlungen der k.-k. zoologisch-botanischen Gesellschaft in Wien. (Wien, 8vo.) N. K. R. Z. L. C, p. O.
- Verh. Ges. Würzburg*—Verhandlungen der physikalisch medicinischen Gesellschaft zu Würzburg. (Würzburg, 8vo.) N. K. R. L. Z. C. O.
- Verh. k. Leop.-Carol. Ak.*—[Vide *Acta Ac. German.*]
- Verh. schweiz. Ges.*—[Vide *Act. Soc. Helvet.*]
- Verh. Siebenb. Ver.*—Verhandlungen und Mittheilungen des Siebenbürgischen Vereins für Naturwissenschaften. (Hermannstadt, 8vo.) N. K. R.
- Verh. Ver. Brünn*—Verhandlungen des naturforschenden Vereines in Brünn. (Brünn, 8vo.) N. R. Z. L.
- Verh. Ver. Hamburg naturw.*—Verhandlungen des naturwissenschaftlichen Vereines in Hamburg. (Hamburg, 8vo.) N. R. Z. L. (C) b.
- Verh. Ver. Hamburg Unterh.*—Verhandlungen des Vereins für naturwissenschaftliche Unterhaltung zu Hamburg. (Hamburg, 8vo.) N. Z. L. C.
- Verh. Ver. Heidelb.*—Verhandlungen des naturhistorisch-medicinischen Vereines zu Heidelberg. Neue Folge. (Heidelberg, 8vo.) N. R. L. C, p.
- Verh. Ver. Karlsruhe*—Verhandlungen des naturwissenschaftlichen Vereines in Karlsruhe. [Consists of Sitzungsberichte and Abhandlungen.] (Karlsruhe, 8vo.) N.
- Verh. Ver. Presburg*—Verhandlungen des Vereines für Natur- und Heilkunde zu Presburg. [Called also] A Pozsonyi Természettudományi és Orvosi Egyesület Közleményei. (Presburg, 8vo.) N. R.
- Verh. Ver. Rheinland*—Verhandlungen des naturhistorischen Vereines der preussischen Rheinlande, Westfalens und des Reg.-Bezirks Osnabrück. (Bonn, 8vo.) N. Z. L. C. O.
- Verh. Ver. Santiago*—Verhandlungen des Deutschen wissenschaftlichen Vereines zu Santiago (Chile). (Santiago, 8vo.) N. R. L. (C) p.
- Verh. Verh. Stockholm*—[Vide *Biol. Foren. Forh.*]
- Versl. Ak. Amsterdam*—Verslagen en Mededeelingen der k. Akademie van Wetenschappen. Afdeeling Natuurkunde. Derde Reeks. (Amsterdam, 8vo.) N. K. R. Z. L. C, p.
- § *Vestník České Ak.*—Věstník české akademie Císaře Františka Josefa pro vědy, slovesnost a umění. (Praze, 8vo.) N.
- Vestník České. Nauk.*—[Vide *SB. Bohmisch. Ges.*]
- Victorian Natural.*—The Victorian Naturalist: the Journal and Magazine of the Field Naturalists' Club of Victoria. (Melbourne, 8vo.) N. Z. C. O.
- Vid. Medd.*—Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjøbenhavn. (Copenhagen, 8vo.) N. R. Z. C.



LIST OF ABBREVIATIONS.

lvii

- Vierteljahrsschr. Ges. Zurich*.—Vierteljahrsschrift der naturforschenden Gesellschaft in Zürich. (Zürich, 8vo.) N. R. Z. L. C, b, p.
- Vyest. est. S. Peterb.*.—Vyestnik estestvoznaniya Izdanie S. Peterburghskagho obshchestva estestvoispytatelei. [Called also] Revue des Sciences publiée par la Société des Naturalistes à St. Pétersbourg. [St. Petersburg, 8vo.] N.
- W. Amer. Scient.*.—The West American Scientist. (Los Angeles, &c., 8vo.) N.
- West Ind. Bull.*.—West Indian Bulletin, the journal of the Imperial Agricultural Department for the West Indies. (Barbados, 8vo.) N. Z.
- Wien. ent. Zeit.*.—Wiener entomologische Zeitung. (Wien, 8vo.) Nz. Z. L. C.
- Wiltshire Mag.*.—The Wiltshire Archæological and Natural History Magazine. (Devizes, 8vo.) N.
- Wiss. Meeresuntersuch.*.—Wissenschaftliche Meeresuntersuchungen herausgegeben von der Kommission zur wissenschaftlichen Untersuchung der deutschen Meere in Kiel und der biologischen Anstalt auf Helgoland. Neue Folge. (Kiel and Leipzig, 4to.) Nz. R. Z. L. C. O.
- Wiss. Mitt. Bosnien*.—Wissenschaftliche Mittheilungen aus Bosnien und der Hercegovina. Herausgegeben vom Bosnisch-Hercegovinischen Landesmuseum in Sarajevo. (Vienna, 8vo.) N. Z.
- Yearb. U. S. Dep. Agric.*.—Yearbook of the United States department of Agriculture. (Washington, 8vo.) N. R. Z. L. (C) b, p. O.
- § *Yn Ltoar Manninagh.*.—[Vide *J. Isle Man Soc.*]
- Zapiski imp. ak. nauk.*.—[Vide *Mem. Ac. St. Petersburg.*]
- Zapiski Kiev. Obshch.*.—Zapiski Kievskagho Obshchestva estestvoispytatelei. [Called also] Mémoires de la Société des Naturalistes de Kiew. (Kiew, 8vo.) N. R. (C) p.
- Zapiski Kharkov. Univ.*.—[Vide *Ann. Univ. Kharkov.*]
- Zapiski Novoross. Obshch.*.—Zapiski Novorossiskagho Obshchestva estestvoispytatelei. (Odessa, 8vo.) N. R. (C) p.
- Zeitschr. ang. Mikr.*.—Zeitschrift für angewandte Mikroskopie herausgegeben von G. Marpmann. (Leipzig, 8vo.) N.
- Zeitschr. Biol.*.—Zeitschrift für Biologie. (München und Leipzig, 8vo.) K. R. C, y. O.
- Zeitschr. Deutsch. geol. Ges.*.—Zeitschrift der deutschen geologischen Gesellschaft. (Berlin, 8vo.) Ng. K. C. O.
- Zeitschr. Ent. Breslau*.—Zeitschrift für Entomologie, herausgegeben vom Verein für Schlesische Insektenkunde zu Breslau. (Breslau, 8vo.) Nz.
- Zeitschr. Ethnol.*.—Zeitschrift für Ethnologie. Organ der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. (Berlin, 8vo.) C. O.
- Zeitschr. Ferd. Tirol*.—Zeitschrift des Ferdinandeums für Tirol und Vorarlberg. (Innsbruck, 8vo.) N. R.

- § *Zeitschr. Hym. Dipt.*—Zeitschrift für systematische Hymenopterologie und Dipterologie. (Teschendorf, 8vo.) Nz. C.
- Zeitschr. Morphol.*—Zeitschrift für Morphologie und Anthropologie. (Stuttgart, 8vo.) N. K. R. C. O.
- Zeitschr. Naturw.*—Zeitschrift für Naturwissenschaften. Im Auftrage des naturwissenschaftlichen Vereins für Sachsen und Thüringen. (Leipzig, 8vo.) N. K. R. Z. C. O.
- Zeitschr. Ornith.*—Zeitschrift für Ornithologie und praktische Geflügelsucht, Organ des Verbandes der ornithologischen Vereine Pommerns. (Stettin, 8vo.) Nz. Z.
- Zeitschr. Sinnesorgane*—Zeitschrift für Psychologie und Physiologie der Sinnesorgane. (Hamburg und Leipzig, 8vo.) R. C, y. O.
- Zeitschr. wiss. Mikr.*—Zeitschrift für wissenschaftliche Mikroskopie und für mikroskopische Technik. (Braunschweig, 8vo.) N. K. R. Z. C, b, y. O.
- Zeitschr. wiss. Zool.*—Zeitschrift für wissenschaftliche Zoologie. (Leipzig, 8vo.) Nz. K. R. Z. L. C, b, p. O.
- Zool. Anz.*—Zoologischer Anzeiger, zugleich Organ der deutschen zoologischen Gesellschaft. (Leipzig, 8vo.) Nz. K. R. Z. L. C, b. O.
- Zool. Beitr.*—Zoologische Beiträge. (Breslau, 8vo.) Nz. K. Z. L. C, b. O.
- Zool. Centrbl.*—Zoologisches Centralblatt. (Leipzig, 8vo.) Nz. K. Z. (C) h. O.
- Zool. Garten*—Der Zoologische Garten. (Frankfurt-a.-M., 8vo.) Nz. Z. (C) p. O.
- Zool. Jahrb. Anat.*—Zoologische Jahrbücher. Abtheilung für Anatomie und Ontogenie der Thiere. (Jena, 8vo.) Nz. K. R. Z. L. C, b. O.
- Zool. Jahrb. Syst.*—Zoologische Jahrbücher. Abtheilung für Systematik, Geographie und Biologie der Thiere. (Jena, 8vo.) Nz. K. R. Z. L. C, b. O.
- Zool. Jahresber.*—Zoologischer Jahresbericht, herausgegeben von der zoologischen Station zu Neapel. (Berlin, 8vo.) N. K. R. Z. L. C, b. O.
- Zool. Mag. Tokyo*—The Zoological Magazine: organ of the Zoological Society of Tokyo. (Tokyo, 8vo.) Nz. Z.
- Zoologica*—Zoologica—Abhandlungen aus dem Gesamtgebiete der Zoologie. Herausgegeben von Dr Carl Chun [formerly *Bibl. Zool.*]. (Stuttgart, 4to.) Nz. K. Z. L. C, b. O.
- Zoologist*—The Zoologist: a Monthly Journal of Natural History. (London, 8vo.) Nz. K. Z. L. C, p. O.
- Zool. Rec.*—The Zoological Record. (London, 8vo.) N. Nz. K. R. Z. L. C, b, p. O.
- Zool. Res.*—Collectio brevium dissertationum novarumque investigationum ad universas zoologicas doctrinas spectantium. (Roma, 8vo.)
- Zool. Vortr.*—Zoologische Vorträge herausgegeben von William Marshall. (Leipzig, 8vo.) Nz. Z.

---

An asterisk prefixed to a quotation signifies that the Recorder has not seen the journal or work referred to.

# THE ZOOLOGICAL RECORD

## FOR 1900.

### I. GENERAL SUBJECTS.\*

BY

Prof. J. ARTHUR THOMSON, M.A.

#### CONTENTS.

	Page		Page
I. LIST OF TITLES . . . .	3	a. Ovum . . . .	51
II. SUBJECT-INDEX		b. Spermatozoon . .	52
1. Text-books, Essays		c. Maturation . .	52
and General . .	44	d. Fertilisation . .	52
2. Distribution . . . .	45	7. Embryological . .	53
3. Morphological . . . .	46	8. Reproduction, Sex,	
4. Physiological . . . .	48	and Heredity . .	55
5. Protoplasm and Cell—		9. Evolution—	
a. Protoplasm . . . .	50	a. General . . . .	57
b. Cell: Structure		b. Variation . . . .	57
and Function . .	50	c. Modification: En-	
c. Nucleus, Nucleo-		vironment and	
lus, Centrosome		Function . . . .	58
etc. . . . .	50	d. Selection and Iso-	
d. Cell-division . .	51	lation . . . .	58
6. Ovum and Spermato-		e. Particular Pro-	
zoon—		blems . . . .	58

#### INTRODUCTION.

FOLLOWING the order of the subject-index we may first note the continuation of Bronn's "Thierreich" (97), and of "Das Tierreich" (644). Noteworthy among text-books are the co-operative treatise by LANKESTER and others (405, 406), EASTMAN's edition of Zittel's Palæontology (760),

\* It will be understood that papers recorded here may also be found under the various classes, II—XVIII. They are included here because of their bearing on general questions, which, if not obvious, will be made apparent in the Subject-Index.

and the last volume of the translation of KORSCHULT and HEIDER'S *Embryology of Invertebrates* (396). The revised edition of PEARSON'S "*Grammar of Science*" (541) may be mentioned as the most important among general essays, and the life of Huxley (350) as the most important historical contribution.

Concerning distribution, we may especially mention CHUN'S "*Deep-Sea*" (133), the beginning of RÖMER & SCHAUDINN'S *Fauna Arctica* (609), and BURCKHARDT'S work on the zooplankton of Swiss lakes (107 & 108).

Among morphological contributions TRAQUAIR'S address on the bearings of fossil ichthyology on the problem of evolution (697), HALLER'S comparative study of Vertebrate brains (300), FÜRBRINGER'S investigation of the pectoral apparatus (245), and RÖRIG'S laws on antler-evolution (610), are representative of the highest standard of work. The third volume of OPPEL'S great treatise on the comparative histology of Vertebrates (525), the translation of the work of EHRlich and LAZARUS on the blood (199), HIS'S study in histogenesis (337), and the separate publication of RABL'S comparative histology of the lens (579), may illustrate the year's progress in minute anatomy.

From among many physiological contributions of importance we may select WALLER'S "*Last sign of life*" (729), BEARD'S "*True function of the thymus*" (53), JENNINGS' studies on the Protozoa (360-365), LOEB'S investigations on the rôle of ion-proteid compounds in vital phenomena (427), the study of colour-change in *Hippolyte varians* by GAMBLE and KEEBLE (253, 375), the little book on orientation by BONNIER (77), and THORNDIKE'S lectures on instinct and associative processes (688 A & 688 B). There are others equally important, but these are typical.

The objective study of protoplasm may be represented by the works of WILSON (745) and HEIDENHAIN (314); the speculative discussion of living matter by GIGLIO-TOS'S book (276). REINKE'S studies on cell-division (602 & 603) are outstanding among the year's contributions to the problem of mitosis.

BEARD'S paper on the morphological continuity of the germ-cells in the skate (52), PAULCKE'S study of the queen-bee's ovary (538), and the investigations of spermatogenesis by EISEN (206 & 207), LOISEL (438-444), and REGAUD (589-599), may represent the papers cited under section 6; but greater interest perhaps attaches to the experiments and discussions on "*artificial parthenogenesis*," notably those of LOEB (429-432).

WILSON contributes a fine essay on modern problems of development (745 A) and a revised edition of his invaluable text-book "*The cell in development and inheritance*" (745): KEIBEL continues his "*norm-tables*" (376); FÉRÉ adds to his curious experiments on eggs (223-227); and there are valuable experimental studies by LOISEL (445-447), DRIESCH (182 & 183), HERBST (319), SCHIMKEWITSCH (633 & 634), BATAILLON (40-46).

Regarding reproduction and sex, the studies on nematodes by MAUPAS (476) are undoubtedly the most remarkable contributions of the year. Also of great importance is the study of the sexual season in mammals by HRAPE (312). Mention should also be made of CUNNINGHAM'S book on sexual dimorphism (150), CUÉNOT'S discussion of the determination of sex (149), and RÖRIG'S study of antlers (611). Among a multitude of studies on regeneration, those of MORGAN (506-511 A), TORNIER (694), and PRZIBRAM (569) seem most important.

As to heredity, we may direct particular attention to PEARSON'S discussion of reversion (543), HAMILTON'S address on heredity and disease (302), SOMMER'S criticism of BROWN-SÉQUARD'S experiments on epilepsy in guinea-pigs (684). There is at once historical and personal interest in VIRCHOW'S lecture on the continuity of life as the foundation of the modern biological outlook.

Evolutionary literature may be illustrated by a variety of types:—

TRAQUAIR's address (697), VERNON's & WARREN's studies on reaction to environment (707 & 732), DE VRIES's mutation-theory (722), HAECKER's Song of Birds (299), CUNNINGHAM's Sexual Dimorphism (150), EIGENMANN's studies on cave animals (200-205), PLATE's discussion of the selection principle (556) and PEARSON's continuation of his data for the problem of evolution in man (542).

# I.—LIST OF TITLES.\*

1. ABELSDORFF, G. Zur Erforschung des Helligkeits- und Farbensinnes bei Menschen und Tieren. Verh. physiol. Ges. Berlin in Arch. Physiol. 1900, pp. 561 & 562.  
ABRAHAM, K. [See KEIBEL, F. (376).]
2. ABSOLON, K. Einige Bemerkungen über mährische Höhlenfauna. Zool. Anz. xxiii, pp. 1-6, 57-60, 189-195.
3. ACLOQUE, A. Faune de France, contenant la description des espèces indigènes, disposées en tableaux analytiques, et illustrées de figures représentant les types caractéristiques des genres. T. I. Vertebrata. 18mo, Paris, 556 pp., 1124 figg.
4. \*——. Sous le microscope. 8vo, Paris, 320 pp., 320 figg.
5. \*——. Le monde sous-marin. 8vo, Abbeville, 319 pp., 236 figg.
6. ADAMKIEWICZ, A. Zum Blutgefäßapparat der Ganglienzelle. Anat. Anz. xvii, pp. 44-48.
7. ADAMS, C. C. Variation in *Io*. P. Amer. Ass. xlix, pp. 208-225, 27 pls.
8. \*AFLALO, F. G. A walk through the Zoological Gardens. 8vo, London, 232 pp.
9. AGASSIZ, A. Cruise of the Albatross. Science xi (ii) pp. 92-98, (iii) pp. 288-292, (iv) pp. 574-578.
10. AICHEL, O. Vergleichende Entwicklungsgeschichte und Stammesgeschichte der Nebennieren. Ueber ein neues normales Organ des Menschen und der Säugethiere. Arch. mikr. Anat. lvi, pp. 1-80, 3 pls. & 1 fig.
11. ALBRECHT, E. Die Ueberwindung des Mechanismus in der Biologie. Biol. Centrbl. xxi, pp. 97-111.
12. \*ALESSI, C. Rapporti somatici nella scala zoologica. Avola, 63 pp.
13. ALLBUTT, CLIFFORD. Historical aspects of the discovery of the circulation of the blood. Nature lxii, pp. 630-632.  
Abstract of Harveian Oration.
14. AMBERG, C. Beiträge zur Biologie des Katzenesces. Inaug. Dissert. Vierteljahrschr. Ges. Zurich xlv, pp. 59-136, 8 figg., 6 tables.
- 14a. AMBERG, O. Die von Schröter-Amberg modifizierte Sedgwick-Rafter'sche Methode der Planktonzählung. Biol. Centrbl. xx, pp. 283-288.

---

\* An asterisk prefixed to a quotation indicates throughout the volume that the Recorder has not seen the Journal or Work referred to.

15. \*AMMON, O. Zur Theorie der reinen Rassetypen. *Zeitschr. Morphol.* ii, pp. 679-685.
16. ANDRES, ANGELO. La misurazione razionali degli organismi col metodo dei millesimi somatici or millesomi (somatometria). *Rend. Ist. Lombardo* xxxiii, pp. 398-429.
17. ANDREWS, C. W. A monograph of Christmas Island (Indian Ocean); Physical features and geology. By C. W. Andrews. With descriptions of the Fauna and Flora by numerous contributors. London, xi+337 pp., 21 pls., map.
18. C. W. ANDREWS, E. A. SMITH, H. M. BERNARD, R. KIRKPATRICK, & F. C. CHAPMAN. On the marine fauna of Christmas Island. *P. Z. S.* 1900, pp. 115-141, 2 pls.  
ANGUS, H. F. [See HOLLBORN & ANGUS (340).]
19. ARAPOW, A. B. Contribution à l'étude des cellules hépatiques binucléaires. *Arch. Sci. Biol.* viii, pp. 184-209.
20. ARNOLD, J. Siderofere Zellen und die "Granulalehre." *Anat. Anz.* xvii, pp. 346-354.
21. —. "Fettkörnchenzellen" und "Granulalehre." *Anat. Anz.* xviii, pp. 385-391.
22. AURIVILLIUS, C. W. S. Animalische Plankton aus dem Meere zwischen Jan-Mayen—Spitzbergen—K. Karls Land und der Nordküste Norwegens. *Svenska Ak. Handl.* xxxii, 71 pp.
23. AVEBURY, LORD. Huxley's Life and Work: First "Huxley Memorial Lecture." *Nature* lxiii, pp. 92-96, 116-119.
24. BACHMANN, HS. Die Planktonfänge mittels der Pumpe. *Biol. Centrbl.* xx, pp. 386-400, 1 fig.
25. \*BÄCHLER, E. Die schützenden Farben und Formen im Thierreich. (Mimikry). *Ber. St. Gall. Ges.* 1898-99 (published 1900), pp. 149-153.
26. \*BALLION, P. La mort chez les animaux (Zoopsychologie et Zooéthique). *Bazas*, 76 pp.
27. BALLOWITZ, E. Notiz über Riesenkerne. *Anat. Anz.* xvii, pp. 340-346, 4 figg.
28. —. Eine Bemerkung zu dem von Golgi und seinen Schülern beschriebenen "Apparato reticolare interno" der Ganglien- und Drüsenzellen. *Anat. Anz.* xviii, pp. 177-181.
29. —. Ueber das Epithel der Membrana elastica posterior des Auges, seine Kerne und eine merkwürdige Struktur seiner grossen Zellsphären. Ein Beitrag zur Kenntniss der Organisation der Zelle. *Arch. mikr. Anat.* lvi, pp. 230-291, 3 pls. and 49 figg.
30. \* —. Kernmetamorphosen in der Hornhaut während ihres Wachstums und im Alter. *Graefe's Arch. Ophthalmol.* l, pp. 360-367, 11 microphotographa.
31. —. Ueber Kern-Arrosion und Kern-Fensterung unter dem Einflusse der Zellsphäre. *Arch. pathol.* clx, pp. 574-583, 2 pls.
32. BANCHI, A. Neotenia nel *Triton vulgaris* L. subsp. *meridionalis*. *Monit. Zool. ital.* xi, pp. 194-200, 4 figg.
33. BARBIERI, N. A. Hétéroplastie. *C.R. Ac. Sci.* cxxx, pp. 1139-1141.

55. BENDA, C. Weitere Beobachtungen über die Mitochondria und ihr Verhältniss zu Secret-granulationen, nebst kritischen Bemerkungen. Verh. Physiol. Ges. Berlin in Arch. Physiol. 1900, pp. 166-178.  
BENOIT, F. [See BRACHET & BENOIT (92).]
56. BERGEL, —. Beiträge zur Physiologie der Flimmerbewegung. Arch. ges. Physiol. lxxviii, pp. 441-465, 8 figg.
57. BERGH, R. S. Das Schicksal isolierter Furchungszellen. Zusammenfassende Uebersicht. Zool. Centrbl. vii, pp. 1-14.
58. BERNARD, H. M. Studies in the retina: rods and cones in the frog and in some other Amphibia. Quart. J. Micr. Sci. xliii, pp. 23-47, 1 pl.
59. —. A suggested origin of the segmented worms, and the problem of metamerism. Ann. Nat. Hist. vi, pp. 509-520.  
BERNARD, M. [See KORSCHULT & HEIDER (396).]
60. BERNSTEIN, J. Chemotropische Bewegung eines Quecksilbertropfens. Zur Theorie der amöboiden Bewegung. Arch. ges. Physiol. lxxx, pp. 628-637, 3 figg.
61. \*BERTACCHINI, P. Morfogenesi e teratogenesi negli Anfibi anuri (III. Serie Anomalie spontanee). Int. J. Anat. xvii, pp. 26-87, 1 pl.
62. \* —. Intorno all' istogenesi dei nemaspermii di *Triton cristatus*. T. c. pp. 408-423, 1 pl.
63. BETHE, A. Einige Bemerkungen über die "intracellulären Kanälchen" der Spinalganglienzellen und die Frage der Ganglienzellen function. Anat. Anz. xvii, pp. 304-309, 3 figg.
64. BETHE, A. Noch einmal über die psychischen Qualitäten der Ameisen. Arch. ges. Physiol. lxxix, pp. 39-52.
65. —. Ueber die Neurofibrillen in den Ganglienzellen der Wirbelthiere und ihre Beziehungen zu den Golginetzen. Arch. mikr. Anat. iv, pp. 513-558, 3 pls.
66. BICKEL, A. Ueber einige Erfahrungen aus der vergleichenden Physiologie des Centralnervensystems der Wirbelthiere. Eine Erwiderung an J. Steiner. Arch. ges. Physiol. lxxxiii, pp. 155-171.
67. BIRGE, E. A. Some of the problems of limnology. Science xi, pp. 253-255.
68. \*BLAKE, J. A. The roof and lateral recesses of the fourth ventricle, considered morphologically and embryologically. J. Comp. Neurol. x, pp. 79-108, 7 pls.
69. BLANCHARD, R. Alphonse Milne-Edwards (1835-1900). Bull. Soc. zool. France xxv, pp. 77-84, 1 pl.
- 69A. BLANFORD, W. T. The distribution of Vertebrate animals in India, Ceylon, and Burma. P. R. Soc. London lxxvii, pp. 484-492.
70. BLAAUW, F. E. Notes on the Zoological Garden of Berlin. P. Z. S. 1900, pp. 299-306.
71. BODEMEYER, E. VON. Quer durch Klein-Asien in den Bulghar-Dagh. Emmendingen, 8vo, v + 169 pp.
72. \*BÖHM, A. & OPPEL, A. Taschenbuch der mikroskopischen Technik. Kurze Anleitung zur mikroskopischen Untersuchung der Gewebe und Organe der Wirbelthiere und des Menschen. Mit einem Beitrag (Reconstructionsmethode) von G. Born. 4 durchges. u. vermehrte Auflage. 8vo, München, vi + 240 pp.

73. \*BOHR, CHR. & HASSELBALCH, K. Ueber die Kohlensäureproduktion des Hühnerembryos. Skandinav. Arch. Physiol. x, pp. 149-173.  
Summary by W. A. NAGEL, Zool. Centrbl. vii, p. 537.
74. BOKORNY, TH. Physiologisches und Chemisches über die Peptonbildung aus Eiweiss. Biol. Centrbl. xx, pp. 53-59.
75. BONMARIAGE, A. & PETRUCCI, R. Sur la loi d'affinité du soi pour soi ou loi de l'association cellulaire. J. Anat. Physiol. xxxvi, pp. 186-209, 1 fig., 291-322, 5 figg., 417-437, 5 figg.
76. BONNET, R. Gibt es bei Wirbeltieren Parthenogenese? Anat. Hefte Ergebn. (for 1899) ix, pp. 820-870.
77. BONNIER, P. L'orientation. Series Scientia, 8vo, Paris, pp. 90, 16 figg.
78. —. L'espace idéal et la théorie de M. de Cyon. C.R. Soc. Biol. lii, pp. 134-137.
79. BORDAGE, E. On the absence of regeneration in the posterior limbs of the Orthoptera saltatoria and its probable causes. Ann. Nat. Hist. v, pp. 234-236.  
Translation from C.R. Ac. Sci. Paris cxxix, pp. 120-123.
80. —. Regeneration of the tarsus and of the two anterior pairs of limbs in the Orthoptera saltatoria. T. c. pp. 237-239.  
Transl. from C.R. Ac. Sci. cxxix, pp. 169-171.
81. —. On the spiral growth of appendages in course of regeneration in Arthropoda. T. c. pp. 314-316.  
Transl. from C.R. Ac. Sci. cxxix, pp. 455-457.
82. —. On the special protection of appendages in process of regeneration after artificial mutilation among insects. T. c. pp. 501-503.  
Transl. from C.R. Ac. Sci. cxxix (1899), pp. 501-504.
83. BORGERT, A. Untersuchungen über die Fortpflanzung der triplyleen Radiolarien, speciell von *Aulacantha scolymantha* H. Zool. Jahrb. xiv, pp. 203-276, 5 pls. and 33 figg.  
BORN, G. [See BÖHM & OPPEL (72).]
84. BOS, J. RITZEMA. Agricultural Zoology. Trans. by J. R. Ainsworth Davis, Introduction by E. A. Ormerod. 2nd Ed. 8vo, London, 332 pp., 155 figg.
85. BOUIN, M. Histogenèse de la glande génitale femelle chez *Rana temporaria* L. Arch. Biol. xvii, pp. 201-381, 4 pls.
86. \*—. Ébauche génitale primordiale chez *Rana temporaria* L. Note préliminaire. Bibliog. anat. viii, pp. 103-108.
87. \*BOUIN, P. Expulsion d'ovules primordiaux chez les têtards de grenouille rousse. T. c. Heft i, 1900, pp. 53-59, 6 figg.
88. — & M. À propos du follicule de de Graaf des Mammifères. Follicules polyovulaires. Mitoses de maturation prématurée. C.R. Soc. Biol. lii, pp. 1 & 2.
89. — & GARNIER, CH. Altérations du tube séminifère au cours de l'alcoolisme expérimental chez le rat blanc. T. c. pp. 23-25.
90. BOURNE, (J. C. An introduction to the study of the comparative anatomy of animals. Vol. i. Animal organisation. The Protozoa and Cœlenterata. 8vo, London, xvi+269 pp., 53 figg.  
— [See also LANKESTER (405).]



91. BOCVIER, E. L. Emile Blanchard. Notice nécrologique. Arch. Mus. Paris II (4th ser.), pp. iii-xviii.
92. \*BRACHET, A. & BEYNOT, F. Sur la régénération du cristallin chez les Amphibiens urodèles. Bibliog. anat. vii, pp. 277-295, 14 figg.
93. BRANDT, A. Zur Phylogenie der Säugetierhaare. Biol. Centrbl. xx, pp. 572-592.
94. BROMAN, IVAR. Ueber Riesenspermatiden bei *Bombinator igneus*. Anat. Anz. xvii, pp. 20-30, 10 figg.
95. —. Ueber Bau und Entwicklung der Spermien von *Bombinator igneus*. T. c. pp. 129-145, 24 figg.
96. —. Ueber die Histogenese der Riesenspermien bei *Bombinator igneus*. Verh. Anat. Ges. xiv, Vers. Anat. Anz. xviii, Ergänzt.-Hft. pp. 157-164, 19 figg.
97. [BROXY, H. G.] Klassen und Ordnungen des Thierreichs. 8vo, Leipzig.
  - Bd. II. O. Hamann, pp. 745-808, 4 pls., pp. 809-872, 4 pls. [See *Echinodermata*.]
  - Bd. IV. M. Braun, vii+1615-1731 pp. [See *Vermes*.]
  - Bd. V. A. E. Ortmann, pp. 1232-1280, 3 pls. [See *Crustacea*.]
  - Bd. VI. W. Leche, pp. 1121-1169, 3 pls. [See *Mammalia*.]
98. BRUMPT, E. Reproduction des Hirudinéas. Recherches expérimentales sur la fécondation. Bull. Soc. zool. France xxv, pp. 90-93.
99. —. De la fécondation par voie hypodermique chez les Hirudinéas. C.R. Soc. Biol. lii, pp. 189 & 190.
100. BRUYANT, C. Sur les variations du plankton au lac Chauvet. C.R. Ac. Sci. cxxx, pp. 45-48.
101. — & ESCABRO, A. Sur la faune halophile de l'Auvergne. T. c. pp. 178-181.
102. BÜHLER, A. Entwicklungstadien menschlicher Corpora lutea. Verh. Anat. Ges. 14th Vers. in Anat. Anz. Ergänzt.-Hft. pp. 150-154.
103. BUCHET, G. Considérations sur les conditions favorables au dosage de plankton de surface en haute mer. Rev. Scient. xiv, pp. 5-15.
104. \*BÜRGER, O. Reisen eines Naturforschers im tropischen Südamerika. 8vo, Leipzig, viii+395 pp., 4 tables, 16 pls., 2 figg.
105. \*BURCKEL, E. Biologische Studien über die Fauna der Kieler Förde (158 Reusenversuche). 8vo, Kiel u. Leipzig, 55 pp., 3 pls., 1 map, 7 tables.
106. BÜTSCHLI, O. Bemerkungen über Plasmaströmungen bei der Zelltheilung. Arch. Entwicklmech. x, pp. 52-57.
107. BURCKHARDT, G. Faunistische und systematische Studien über das Zooplankton der grösseren Seen der Schweiz und ihrer Grenzgebiete. Rev. Suisse Zool. vii (1900), pp. 353-715, 5 pls.
108. \*—. Quantitative Studien über das Zooplankton des Vierwaldstättersees. Mt. Ges. Luzern Heft 3, 1900, 309 pp. & 1 fig. Review in Zool. Centrbl. vii, pp. 649-657.

BURNETT, F. L. [See PARKER & BURNETT (535).]

109. BUTSCHINSKY, P. Die Metazoen Fauna der Salzseelimane bei Odessa. Zool. Anz. xxiii, pp. 495-497.
110. \*BYRAM, W. J. The beginnings of life. P. Soc. Queensland xv, pp. 5-26.
111. BYRNES, ESTHER F. The maturation and fertilisation of *Limax agrestis* L. J. Morphol. xvi, pp. 201-236, 2 pls.
- 111A. CALKINS, G. N. Nuclear division in Protozoa. Biol. Lect. Wood's Holl for 1899, pp. 209-230, 4 figg.
112. CALVERT, P. P. The means of defence of animals. Scient. Amer. Supplement 1900, pp. 20396 & 20397, 20456 & 20457, 20466 & 20467, 20516 & 20517, 20535-20537.  
Interesting lectures on Struggle for Existence etc.
113. CAMERANO, L. L'étude quantitative des organismes et les indices de variabilité, de variation, de fréquence, de déviation et d'isolement. Arch. ital. Biol. xxxiv, pp. 1-16.
114. —. Lo studio quantitativo degli organismi ed il coefficiente somatico. Atti Acc. Torino xxxv, pp. 327-346, Arch. ital. Biol. xxxiii, pp. 157-176.
115. —. Lo studio quantitativo degli organismi e gli indici di variabilità, di variazione, di frequenza, di deviazione e di isolamento. Atti Acc. Torino xxxv, pp. 650-666, Boll. Mus. Torino xv, 18 pp.
116. \*—. Osservazioni intorno al modo di dividere la lunghezza-base nel calcolo del coefficiente somatico. Boll. Mus. Torino xv, 8 pp.
117. \*CAPRIATI, V. Influenza della elettricità sullo sviluppo degli organismi animali. Nota preventiva. Ann. Neurol. Napoli xviii, pp. 192-196.  
Influence of electric currents on tadpoles.
118. CARLGREN, O. Ueber die Einwirkung des constanten galvanischen Stromes auf niedere Organismen. Arch. Physiol. 1900, pp. 49-76, 1 pl.
119. —. Ueber die Einwirkung des constanten galvanischen Stromes auf niedere Organismen. Zweite Mittheilung: Versuche an verschiedenen Entwicklungsstadien einiger Evertebraten. Arch. Physiol. 1900, pp. 465-480.
120. CARNOY, J. B. (the late) & H. LEBRUN. La vésicule germinative et les globules polaires chez les batraciens. Cellule xvii, pp. 203-265, 7 pls.
121. \*CATTANEO, G. I limiti della variabilità. (A proposito di un libro del Prof. D. Rosa.) See Zool. Rec. 1899. Riv. Sci. Biol. Como ii, 10 pp.
122. \*—. Che cosa si deve intendere per "eredità dei caratteri acquisiti." T. c. pp. 315-325.
123. \*CELESIA, P. Impotenza della selezione naturale sopra la lotta dei determinanti nella partenogenesi. T. c. pp. 428-435.
124. CHAMBERLAIN, A. F. Primitive Nature Study. Trans. Canad. Inst. (Semi-Centennial Mem. Vol.) vi (1899), pp. 313-344.
125. CHARRIN et GUILLEMONAT. Influence des extraits d'ovaires sur les modifications de la nutrition engendrées par la grossesse. C.R. Ac. Sci. cxxx, pp. 1787-1789.

126. [CHARRIN et GUILLEMONAT.] Influence des extraits d'ovaires sur les modifications de la nutrition engendrées par la grossesse. C.R. Soc. Biol. lii, pp. 585-587.
127. —, — et LEVADITI. Mécanisme des insuffisances de développement des rejetons issus de mères malades. C.R. Ac. Sci. cxxx, pp. 92-94.
128. CHATIN, J. Karyokinèses anormales. C.R. Soc. Biol. lii, p. 345.
129. \*CHAUVIN, L. Georges Cuvier. Savants français: Eloges historiques, prononcés à l'Institut de France. Précédés d'une notice sur Georges Cuvier. 8vo, Limoges, 159 pp., 11 engr.
130. CHILD, C. M. The egg of *Schichostemma*. Science xi, pp. 249 & 250.
- 130A. —. The significance of the spiral type of cleavage and its relation to the process of differentiation. Biol. Lect. Wood's Holl for 1899, pp. 231-266, 27 figg.
131. CHOLODKOVSKY, N. Ueber den Lebenscyklus der *Chermes*-Arten und die damit verbundenen allgemeinen Fragen. Biol. Centrbl. xi, pp. 285-283, 3 figg.
132. CHORONSHITZKY, B. Die Entstehung der Milz, Leber, Gallenblase, Bauchspeicheldrüse und des Pfortadersystems bei den verschiedenen Abteilungen der Wirbeltiere. Anat. Hefte xiii, pp. 363-622, 85 figg.
133. CHUN, C. Aus den Tiefen des Weltmeeres. Schilderungen von der deutschen Tiefsee-Expedition. 4to, Jena, 549 pp., 6 chromolithographs, 8 heliogravures, 32 pls., 2 maps & 390 figg.
134. \*—. Erläuterungen zur Ausstellung der Ergebnisse der deutschen Tiefsee-Expedition. Verh. Ges. deutsch. Naturf. und Aerzte, 71 Vers. München, Theil i, 1900, pp. 141-143.
135. CLEVE, P. T. Geographical distribution of Atlantic Copepoda and their physical conditions. Ofv. Ak. Forh. Arg. 57, pp. 139-144.
136. —. Plankton from the southern Atlantic and the southern Indian ocean. T. c. pp. 919-938.
137. —. Plankton from the Red Sea. T. c. pp. 1025-1038.
138. COCKERELL, T. D. A. The Lower and Middle Sonoran Zones in Arizona and New Mexico. Amer. Natural. xxxiv, pp. 285-293.
139. \*COLLAMARINI, G. Biologia animale (Zoologia generale, speciale per Naturalisti, Medici, et Veterinari). 8vo, Milano, xii + 426 pp., 23 pls.
140. CONANT, F. S. Notes on zoological collecting in Jamaica, W. I. With sketch map. Johns Hopkins Univ. Circ. xix, pp. 23-25.
141. CONFÉ, A. De l'influence du milieu nutritif sur le développement des Nématodes libres. C.R. Soc. Biol. lii, pp. 374 & 375.
142. \*COTRONEI, G. B. DE ROSA. Note biologiche: Lotte cellulari negli organismi. Riv. modern. Firenze Ann. iii, Fasc. 5 & 6, 15 pp.
143. COUPIN, H. Les animaux incrusteurs. Rev. Scient. xiii, pp. 684-690.
144. —. Le sentiment de la mort chez les animaux. T. c. xiv, pp. 780-784.
145. COURTADE, D. L'irritabilité dans la série animale. Series Scientia. 8vo, Paris, pp. 86.

- COUVREUR, E. [See DUBOIS & COUVREUR (189).]
146. \*CREMER, M. Ueber die Einwirkung von Forellensamenpresssaft auf Forelleneier. SB. Ges. Munchen xvi, p. 111.  
No effect.
- CROCKER, G. R. [See RITTER & CROCKER (608).]
147. CUÉNOT, L. La distribution des sexes dans les pontes de pigeons. C.R. Ac. Sci. cxxxi, pp. 756-758.
148. —. La distribution des sexes dans les pontes de pigeons. C.R. Soc. Biol. lii, pp. 870-872.
149. —. Sur la détermination du sexe chez les animaux. Bull. Sci. France Belgique xxxii (1899), pp. 462-535.
150. CUNNINGHAM, J. T. Sexual Dimorphism in the Animal Kingdom: a theory of the evolution of secondary sexual characters. 8vo, London, xi+317 pp., 32 figg.
151. —. Secondary sexual characters. Nature lxiii, p. 29. [Letter.]  
— [See SCHMEIL, O. (638).]
152. \*CURRERI, G. Sulle cause meccanico-biologiche della formazione degli accumuli di plankton. Boll. Soc. Rom. Zool. ix, pp. 199-209.
153. CURTIS, W. C. Is there any distinction between sexual reproduction and asexual reproduction? Science xii, pp. 940-946.  
Summary of R. HERTWIG's views.
154. CUTORE, G. Anomalie del sistema nervoso centrale ottenute sperimentalmente in embrioni di pollo. Anat. Anz. xviii, pp. 391-414, 12 figg.
155. CYON, E. VON. Ohrlabyrinth, Raumsinn und Orientirung. Arch. ges. Physiol. lxxix, pp. 211-302.
156. —. Die physiologischen Verrichtungen der Hypophyse. T. c. lxxxi, pp. 267-327, 3 pls.
157. —. Les organes périphériques du sens de l'espace. C.R. Ac. Sci. cxxx, pp. 267-269.
158. —. Sur le sens de l'espace (a propos de la note de M. Bonnier). C.R. Soc. Biol. lii, pp. 173 & 174.  
[BONNIER, P. Remarques au sujet de la note précédente. T. c. pp. 174 & 175.]
159. DANGEARD, P. A. Programme d'un essai sur la reproduction sexuelle. Le Botaniste vii, pp. 263-268.
160. \*DANILEWSKY, B. Sur la "Chlorophylle animale." Primo centenario Lazzaro Spallanzani. 8vo, Reggio-Emilia, vol. i, pp. 133-139.
161. [DARWIN, CHARLES.] Journal of Researches into the Natural History and Geology of the countries visited during the Voyage of H.M.S. "Beagle" round the world. With a biographic introduction. Cheap edition. 8vo, London, 492 pp.
162. DAVENPORT, C. B. A history of the development of the quantitative study of variation. P. Amer. Ass. xlix, pp. 197-203.
163. —. Variation and correlation in the tibial spines of *Melanoplus*. T. c. p. 225.
164. —. A history of the quantitative study of variation. Science xii, pp. 864-870.

- 164A. [DAVENPORT, C. B.] The aims of the quantitative study of variation. Biol. Lect. Wood's Holl for 1899, pp. 267-272.
165. —. On the variation of the shell of *Pecten irradians* Lamarck, from Long Island. Amer. Natural xxxiv, pp. 863-877.
166. —. On the variation of the statoblasts of *Pectinatella magnifica* from Lake Michigan at Chicago. T. c. pp. 959-968, 9 figg. Science xi, p. 253.
167. \*— & G. C. Introduction to Zoology: a Guide to the study of animals, for the use of secondary schools. 8vo, New York and London, xii + 412 pp.
168. DAVENPORT, G. C. Variation in the sea anemone, *Sagartia lucia*. (Abstract.) Science xi, p. 253.
169. \*DAWYDOW, K. [On regeneration in *Ophiura*.] Russian. Trudui St Peterb. Obshch. xxxi, pp. 27-32, Résumé, pp. 54-59.
170. DEAN, BASHFORD. The seventieth birthday of Carl von Kupffer. His life and works. Science xi, pp. 364-369.
171. DELAGE, YVES. Pourquoi les canaux demi-circulaires sont disposés et conformés comme ils le sont. Arch. Zool. exp. viii, pp. 625-634, 5 figg., Bull. Soc. zool. France xiv, pp. 173-176.
172. — & M. Sur les relations entre la constitution chimique des produits sexuels et celle des solutions capables de déterminer la parthénogénèse. C.R. Ac. Sci. cxix, pp. 1227-1229.
- DENNY, W. A. See EIGENMANN & DENNY (205).
173. DHÉRÉ, C. Le cuivre hématique des Invertébrés et la capacité respiratoire de l'hémocyanine. C.R. Soc. Biol. lii, pp. 458 & 459.
174. DISTANT, W. L. Biological Suggestions. Mimicry (concluded). Zoologist iv, pp. 116-130.
175. DÖDERLEIN, L. Ueber die Erwerbung des Flugvermögens bei Wirbelthieren. Zool. Jahrb. xiv, pp. 49-61.
176. DOFLEIN, F. Studien zur Naturgeschichte der Protozen. iv. Zur Morphologie und Physiologie der Kern- und Zelltheilung. Nach Untersuchungen an *Noctiluca* und andern Organismen. Zool. Jahrb. xiv, pp. 1-60, 4 pls. & 23 figg.
177. \*—. Von den Antillen zum fernen Westen. Reiseskizzen eines Naturforschers. 8vo, Jena, 87 figg.
178. \*—. Ueber die Vererbung von Zelleigenschaften. Verh. Deutsch. zool. Ges. x Jhrsvers. pp. 135-142.
179. \*DONAGGIO, A. I canalicoli del citoplasma e il loro rapporto con uno spazio perinucleare. Riv. Sperim. Fematr. Regio Emilix. xxvi, pp. 188-196, figg.
180. DOWNING, E. R. The spermatogenesis of *Hydra*. Science xii, pp. 228 & 229.
181. DREYFUS, R. Experimenteller Beitrag zur Lehre von den nicht-akustischen Functionen des Ohrlabyrinths. Arch. ges. Physiol. lxxix, pp. 604-635.
182. DRIESCH, HANS. Die isolierten Blastomeren des Echinideneies. Eine Nachprüfung und Vertiefung früherer Untersuchungen. Arch. Entwicklmech. x, pp. 361-410, 20 figg.

183. [DRIESCH, HANS.] Studien über das Regulationsvermögen der Organismen. iv. Die Verschmelzung der Individualität bei Echinidenkeimen. T. c. pp. 411-434, 13 figg.
184. —. Von der Allgemeingiltigkeit wissenschaftlicher Aussagen. Kritische Erörterungen. Biol. Centrbl. xx, pp. 16-25.
185. DUBOIS, R. Sur la spermase et l'ovulose. C.R. Soc. Biol. lii, pp. 197-199.
186. —. Sur le cuivre normal dans la série animale. T. c. pp. 392-394.
187. —. Sur le mécanisme de la biophotogénèse. T. c. p. 569 & 570.
188. —. Influence de la température ambiante sur les dépenses de l'organisme, chez les animaux à température variable, pendant le sommeil hivernal. T. c. pp. 938 & 939.
189. \* — & COUVREUR, E. Leçons de physiologie expérimentale. 8vo, Paris, 388 pp., 303 figg.
190. DUNCKER, G. On variation of the rostrum in *Palæmonetes vulgaris* Herbst. Amer. Natural. xxxiv, pp. 621-633, 2 pls.
191. —. Variation und Asymmetrie bei *Pleuronectes fesus* L. statistisch untersucht. Zool. Anz. xxiii, pp. 141-148. Also Wiss. Meeresuntersuch. Bd. III. Abth. Helgoland, pp. 333-406, 4 pls., 3 figg.
192. \*DYBOWSKI, B. Einige Bemerkungen über neue Tierformen der baikalischen Fauna. Kosmos (Lemberg) xxv, pp. 487-491.  
Summary Zool. Centrbl. viii (1901) pp. 87 & 88.
- EASTMAN, C. R. [See ZITTEL, K. A. VON (760).]
193. EATON, E. H. The Zoology of the Horn Expedition. Amer. Natural. xxxiv, pp. 25-31.  
Re Baldwin Spencer's Report of the Horn Expedition to Central Australia published Sept. 1896.
194. EBNER, V. VON. Ueber das Verhalten der Zona pellucida zum Eie. Anat. Anz. xviii, pp. 55-62, 2 figg.
195. —. Ueber die Theilung der Spermatocyten bei den Säugethieren. SB. Ak. Wien cviii, pp. 429-448, 1 pl.
196. EDINGER, L. Das Gedächtnis der Fische. Ber. Senckenberg. Ges. 1900, pp. cvii-cxvi.
197. EDWARDS, C. L. The lower temperature limits for the incubation of the eggs of the common fowl. P. Amer. Ass. xlix, pp. 244 & 245.  
EHRENBERG, C. G. [See HEMPRICH & EHRENBERG (316).]
- 197A. EHRLICH, P. On immunity with special reference to cell life. (Croonian Lecture.) P. R. Soc. London lxvi, pp. 424-448.
198. —. Cellularbiologische Betrachtungen über Immunität. Ber. Senckenberg. Ges. 1900, pp. cxlvii-cl.
199. — & LAZARUS, A. Histology of the blood: normal and pathological. Edited and translated by W. Myers. 8vo, Cambridge, xii + 216 pp.  
Review by T. H. MILROY. Nature lxii, pp. 410 & 411.
200. EIGENMANN, C. H. Degeneration in the eyes of the cold-blooded vertebrates of the North American caves. [President's Address.] P. Indiana Ac. Sci. for 1899, pp. 31-46, 9 figg.
201. —. Some cases of saltatory variation. P. Amer. Ass. xlix, p. 207.

202. [EIGENMANN, C. H.] A contribution to the fauna of the caves of Texas. P. Amer. Asa. pp. 228-230.
203. —. Degeneration in the eyes of the cold-blooded Vertebrates of the North American Caves. Science xi, pp. 492-503, 14 figg. & 1 diagram.
204. —. The eyes of the blind vertebrates of North America. II. The eyes of *Typhlomolge rathbuni* Stejneger. Tr. Amer. Micr. Soc. xxi, pp. 49-60, 2 pls.
- 204A. —. The Blind-Fishes. Biol. Lect. Wood's Holl for 1899, pp. 113-126.
205. — & DENNY, W. A. The eyes of the blind Vertebrates of North America. III. The structure and ontogenic degeneration of the eyes of the Missouri Cave Salamander. Biol. Bull. ii, pp. 33-41, 9 figg.
206. EISEN, G. The spermatogenesis of *Batrachoseps*. Polymorphous spermatogonia, auxocytes, and spermatocytes. J. Morphol. xvii, pp. 1-117, 14 pls. & some figg.
207. —. A preliminary account of spermatogenesis of *Batrachoseps attenuatus*, polymorphous spermatogonia, auxocytes, and spermatocytes. Biol. Bull. i, pp. 99-113, 16 figg.
208. EISMOND, J. Ueber die Natur der sogenannten kinetischen Centren der Zellen. Verh. Anat. Ges. xiv, Vers. Anat. Anz. xviii, Ergänzg.-Hft. pp. 125-140, 5 figg.
209. ELLIS, HAVELOCK. Huxley's ancestry. Nature lxiii, p. 127.
210. \*EMERY, C. Critiche e polemiche in argomenti di biologia. Riv. Sci. biol. ii, pp. 414-427.
211. Encyklopädie der Naturwissenschaften. 8vo, Breslau. Bd. viii. Lief 37, pp. 497-624.
212. \*ENGEL, G. Die Rückbildungsvorgänge an abortiven Embryonen. Ein Beitrag zur pathologischen Embryologie. Beitr. pathol. Anat. u. allg. Pathol. xxviii, pp. 323-348, 1 pl. & 13 figg.  
Also Dissertatio. Freiburg i. B. 1900, 31 pp.
213. ENTEMAN, M. M. Variations in the crest of *Daphnia hyalina*. Amer. Natural. xxxiv, pp. 879-890, 6 figg.
214. \*ETERNOD, A. C. F. Contribution à la classification embryologique des œufs. Bibliog. anat. viii, pp. 231-241 with figg.  
EUSÉBIO, A. [See BRUYANT & EUSÉBIO (101).]
215. EVERMANN, B. W. Some observations concerning species and subspecies. Science xi, pp. 451-455.  
EYSERTH, B. [See SCHÖNICHEN & KALBERLAH (642).]
216. \*FENIZIA, C. Pel centenario del MDCCCXCIX. Un precursore napolitano dell' evoluzione. Atti. Soc. Veneto-Trent. iv, pp. 79-115. [Franc. Mario Pagano].
217. \*—. Storia della evoluzione. Con un saggio di bibliografia evolucionista. Milano, 399 pp.
218. FÉRÉ, CH. Un arrêt de développement de la zone opaque du blastoderme du poulet. J. Anat. Physiol. xxxvi, pp. 99-102, 1 fig.
219. —. Note sur la multiplicité des causes des variations de l'orientation de l'embryon de poulet. T. c. pp. 210-216.

220. [FÉRÉ, CH.] Les lignes papillaires de la paume de la main. T. c. pp. 376-392, 14 figg.
221. —. Les lignes papillaires de la plante du pied. T. c. pp. 602-618, 18 figg.
222. —. Canitie précoce et longévité héréditaires. C.R. Soc. Biol. lii, pp. 230 & 231.
223. —. Note à propos d'une objection à l'incubation artificielle dans les expériences de tératogénie. T. c. pp. 231 & 232.
224. —. Note sur l'influence des injections préalables de solutions de caféine dans l'albumen de l'œuf sur l'évolution de l'embryon de poulet. T. c. pp. 471-474.
225. —. Remarques sur l'incubation des œufs de poule privés de leur coquille. T. c. pp. 601 & 602.
226. —. Note sur l'influence d'injections préalables de solutions de cantharidine dans l'albumen de l'œuf sur l'évolution de l'embryon de poulet. T. c. pp. 681-685.
227. —. Note sur l'influence de l'échauffement préalable sur l'incubation de l'œuf de poule. T. c. pp. 796 & 797.
228. \*FICKERT, C. & KOHLMAYER, O. Tierkunde, unter grundsätzlicher Betonung der Beziehungen zwischen Lebensverrichtungen, Körperbau und Aufenthaltsort der Tiere. 3 Aufl. 1900. 8vo, Leipzig, vii + 436 pp., 570 figg., 1 map.
229. FISCHER, A. Ueber die Regeneration der Linse. Anat. Hefte xiv, pp. 1-255, 9 pls. & 44 figg.
230. —. Zur Frage der Linsenregeneration. Anat. Anz. xviii, pp. 324-326.
231. FISCHER, E. La transmission des caractères nouvellement acquis. C.R. Soc. Helvet. in Arch. Phys. Nat. x, pp. 562 & 563.
232. —. Les effets de la température sur les couleurs des papillons. T. c. pp. 563-565.
233. \*FLEISCHMANN, A. Die Descendenztheorie. Gemeinverständliche Vorlesungen über den Auf- und Niedergang einer naturwissenschaftlichen Hypothese, gehalten vor Studierenden aller Facultäten. 8vo, Leipzig, vii + 274 pp., 124 figg.
234. \*FLEMMING, W. Ueber Zelltheilung. Berliner klin. Wochenschr. xxxvii, pp. 337-340, 9 figg.
235. FOÀ, C. Ueber die feinere Structur der geschichteten Pflasterepithelien. Arch. mikr. Anat. lv, pp. 431-441, 1 pl.
236. —. La greffe des ovaires, en relation avec quelques questions de biologie générale. Arch. ital. Biol. xxxiv, pp. 43-73.
237. —. L'innesito delle ovaia, in rapporto con alcune questioni de biologia generale. Atti. Acc. Lincei (Rend.) ix, pp. 230-232.
238. FOÀ, ANNA. Esistono il polimorfismo e la partenogenesi nei Gamasidi? Bull. Soc. ent. Ital. xxxii, pp. 121-149, 13 figg.
239. FOOT, K. & STROBELL, E. C. Photographs of the egg of *Allolobophora fetida*. J. Morphol. xvi, pp. 601-618, 3 pls.
- FOWLER, G. H. [See LANKESTER (405).]



240. FRASSETTO, F. Il coefficiente somatico di Camerano nello studio quantitativo degli organismi. *Monit. Zool. ital.* xi, pp. 147-151.
241. \*FRAZER, P. The life and letters of Edward Drinker Cope. *Amer. Geol.* xxvi, pp. 67-128, 10 pls.
242. FRIEDENTHAL, Hs. Ueber einen experimentellen Nachweis von Blutsverwandschaft. *Arch. Physiol.* 1900, pp. 494-508.
243. FUCHS, R. F. Zur Physiologie und Wachstumsmechanik des Blutgefäßsystems. *Arch. Physiol.* 1900, pp. 102-154.
244. FÜRBRINGER, M. Zur systematischen Stellung der Myxinoiden und zur Frage des alten und neuen Munde. *Morphol. Jahrb.* xxviii, pp. 478-482.
245. —. Zur vergleichenden Anatomie des Brustschulterapparates und der Schultermuskeln. *Jena. Zeitschr.* xxxiv, pp. 215-718, 5 pls. & 141 figg.
246. FÜRST, C. M. Haarzellen und Flimmerzellen. *Anst. Anz.* xviii, pp. 190-203, 6 figg.
247. FUHRMANN, O. Beitrag zur Biologie des Neuenburger Sees. *Biol. Centrbl.* ix, pp. 85-96.
248. \*FUNKE, R. Ueber die Schwankungen des Fettgehaltes der fettführenden Organe im Kreislaufe des Jahres. Eine histologisch-biologische Studie an Amphibien und Reptilien. *Denk. Ak. Wien [Math. nat. Cl.]* lxxviii, pp. 595-837, 1 pl.
249. GADEAU DE KERVILLE, H. Note sur la faune de la fosse de la Hague (Manche). *Bull. Soc. zool. France* xxv, pp. 33-36.
250. GALLARDO, A. A propos des figures karyokinétiques. *C.R. Soc. Biol.* lii, pp. 732 & 733.
251. —. L'interprétation dynamique de la karyokinèse. *T. c.* pp. 734 & 735.
252. GALLOWAY, T. W. Studies on the cause of the accelerating effect of heat upon growth. *Amer. Natural.* xxxiv, pp. 949-957, 6 figg. (curves).
253. GAMBLE, F. W. & KEEBLE, F. W. *Hippolyte varians*: a Study in Colour-change. *Quart. J. Micr. Sci.* xliii, pp. 589-698, 5 pls.  
See KEEBLE & GAMBLE (375).
254. \*GARBOWSKI, T. Die Keimblättertheorie und die modernen Richtungen in der vergleichenden Morphogenie [Polish]. *Verh. ix, Vera. poln. Naturf. u. Aerzte.* Krakau, 1900, pp. 67.  
Summary in *Zool. Centrbl.* viii (1901), pp. 85-87.
255. GARNIER, CH. Contribution à l'étude de la structure et du fonctionnement des cellules glandulaires séreuses. Du rôle de l'ergastoplasme dans la sécrétion. *J. Anat. Physiol.* xxxvi, pp. 22-98, 3 pls.  
GARNIER, C. [See BOUIN & GARNIER (89).]
256. \*GARREY, W. E. The effects of ions upon the aggregation of flagellated Infusoria. *Amer. J. Physiol.* iii, pp. 291-315.
257. GARSTANG, W. The impoverishment of the sea. A critical summary of the experimental and statistical evidence upon the alleged depletion of the trawling grounds. *J. Mar. Biol. Ass.* vi, pp. 1-69.
258. —. Albinism and Natural Selection. *Nature* lxii, pp. 620 & 621. [A letter.]

259. GASKELL, W. H. Origin of Vertebrates deduced from the study of Ammocetes. Parts v-viii. J. Anat. Physiol. norm. path. xxxiv, pp. 465-587, 3 pls. & 33 figg.
260. GATHY, E. Contribution à l'étude du développement de l'œuf et de la fécondation chez les Annélides. (*Tubifex rivulorum* Lam. et *Cleptine complanata* Sav.) Cellule xvii, pp. 7-62, 4 pls.
261. GAULE, J. Ueber den Einfluss der Nacht. Centrbl. Physiol. xiv, pp. 25-31.
262. —. Ueber den Einfluss der Jahreszeit auf das Gewicht der Muskeln bei Fröschen. Arch. ges. Physiol. lxxxiii, pp. 81 & 82.
263. —. Ueber die geschlechtliche Differenz der Muskeln bei Fröschen. Arch. ges. Physiol. lxxxiii, pp. 83-88.
264. GAUTIER, A. Localisation, élimination et origines de l'arsenic chez les animaux. C.R. Ac. Sci. cxxx, pp. 284-291.
265. —. La fonction menstruelle et le rut des animaux. Rôle de l'arsenic dans l'économie. C.R. Ac. Sci. cxxxi, pp. 361-367.
266. GEMMILL, J. F. The vitality of the ova and spermatozoa of certain animals. J. Anat. Physiol. norm. path. xxxiv, pp. 163-181, 6 figg.
267. —. Negative evidence regarding influence of nutrition on sex. Comm. Millport Stat. i, pp. 32-36.
268. GERASSIMOFF, J. J. Ueber die Lage und die Function des Zellkerns. Bull. Soc. Moscou 1899, pp. 220-267.
269. GIARD, A. Les idées de Hans Driesch sur les globules polaires. C.R. Soc. Biol. lii, pp. 44-46.
270. —. Sur l'adaptation brusque de l'Épinoche (*Gasterosteus trachurus* Cuv. et Val.) aux eaux alternativement douces et marines. T. c. pp. 46-48.
271. —. Sur le déterminisme de la métamorphose. T. c. pp. 131-134.
272. —. A propos de la parthénogénèse artificielle des œufs d'Echinodermes. T. c. pp. 761-764.
273. —. Développement des œufs d'Echinodermes sous l'influence d'actions kinétiques anormales (solutions salines et hybridation). T. c. pp. 442-444.  
— [See ROGEE, E. (612).]
274. \*GIARDINA, A. Sui pretesi movimenti ameboidi della vesicola germinativa. Riv. Sci. biol. Vol. II. Nos. 6 & 7, pp. 1-11, 2 figg.
275. GIGLIOLI, H. H. Dr W. Kobelt and the Mediterranean Fauna. Nature lxi, pp. 227 & 228.
276. GIGLIO-TOS, E. Les problèmes de la vie. Essai d'une interprétation scientifique des phénomènes vitaux. 1. Partie. La substance vivante et la cytodierèse. 8vo, Torino, 300 pp., 33 figg.
277. —. Sui granuli dei corpuscoli rossi. Anat. Anz. xvii, pp. 337-340.
278. GILL, TH. On the zoo-geographical relations of Africa. Science xi, pp. 900 & 901.
279. GILSON, G. Éloge funèbre de J. B. Carnoy. Cellule xvii, pp. iii-xxiv, with portrait.

280. GLEY, E. La Société de Biologie. *Rev. Scient.* xiii, pp. 1-11, 481-491, 520-528, 552-563. (Historical.)
281. \*——. Rôle des glandes génitales accessoires dans la reproduction. *Primo centenario Lazzaro Spallanzani.* 8vo, Reggio-Emilia, Vol. I, pp. 105-111.
282. \*——. *Essais de philosophie et d'histoire de la biologie.* 18mo, Paris, 341 pp.
283. \*GODLEWSKI, E. Ueber die Kernvermehrung in den quergestreiften Muskelfasern der Wirbelthiere. *Anz. Ak. Krakau* 1900, pp. 128-136, 1 pl.
284. \*——. Ueber die Einwirkung des Sauerstoffs auf Entwicklung und über den Gaswechsel in den ersten Entwicklungsstadien von *Rana temporaria*. *T. c.* pp. 232-255, 6 figg.
285. GÖTTE, A. Wie man Entwicklungsgeschichte schreibt. *Zool. Anz.* xxiii, pp. 559-565.
286. GOLGI, C. Intorno alla struttura delle cellule nervose della corteccia cerebrale. *Verh. Anat. Ges.* xiv, *Vers. Anat. Anz. Ergänzg. Hft.* pp. 164-176, 2 figg.
287. ———. Beitrag zur Kenntnis der markhaltigen Nervenfasern. *T. c.* pp. 176-178, 1 fig.
288. ———. Ueber die feinere Structur der Zellen mancher Drüsen bei den Säugetieren. [Beobachtungen von A. Negri.] *T. c.* pp. 178-181.  
GOODRICH, E. S. [See LANKESTER (406).]
289. \*GREEFF, R. Die mikroskopische Anatomie des Sehnerven und der Netzhaut. *Handbuch der Augenheilkunde von Graefe-Saemisch.* 2nd Ed. Leipzig, 1900, vol. ii, Ch. 5, 212 pp., 2 pls., and 53 figg.  
Reported on in *Zool. Centrbl.* viii (1901), pp. 121-123.  
GREGORY, J. W. [See LANKESTER (406).]
290. GRUNDMANN, E. Ueber Doppelbildungen bei Sauropsiden. *Anat. Hefte* xiv, pp. 257-300, 4 pls. and 11 figg.
291. GÜNTHER, A. C. L. G. The unpublished correspondence of William Swainson with contemporary naturalists (1806-1840). Presidential address. *P. Linn. Soc. London* 1900, pp. 14-24.  
GUILLEMONAT. [See CHARRIN & GUILLEMONAT (125, 126).]  
———. [See CHARRIN, GUILLEMONAT & LEVADITI (127).]
292. GURWITSCH, A. Zur Entwicklung der Flimmerzellen. *Anat. Anz.* xvii, pp. 49-58, 5 figg.
293. ———. Idiozom und Centrankörper im Ovarialeie der Säugethiere. *Arch. mikr. Anat.* lvi, pp. 377-392, 1 pl.
294. GUYER, M. F. Spermatogenesis in hybrid pigeons. *Science* xi, pp. 248 & 249.
295. \*HAACKE, W. & KUHNERT, W. Das Thierleben der Erde Lief 1, 48 pp., 4 pls., 4to, Berlin.
296. \*HACHET-SOUPLET, P. *Examen psychologique des animaux.* 16mo, Paris, 162 pp.
297. HAECKEL, E. *Kunst-Formen der Natur.* 4 Lief. Folio, Leipzig u. Wien, pls. 31-40, 10 pp. text.

298. HAECKER, V. Mitosen im Gefolge amitosenähnlichen Vorgänge. *Anat. Anz.* xvii, pp. 9-20, 16 figg.
299. —. Der Gesang der Vögel, seine anatomischen und biologischen Grundlagen. 8vo, Jena, vii+102 pp., 13 figg.
300. HALLER, B. Vom Bau des Wirbelthiergehirns. II Theil. *Emys*. III Theil. *Mus*, nebst Bemerkungen über das Hirn von *Echidna*. *Morphol. Jahrb.* xxviii, pp. 252-346, 5 pls., pp. 347-477, 7 pls. and 4 figg.
301. HALLEZ. Sur deux causes d'erreur en zoologie. *Bull. Soc. zool. France* xiv, pp. 21-28.  
[Convergence, etc.]
302. HAMILTON, D. J. On heredity in disease. *Scottish Med. and Surg. Journal* vi, pp. 289-303. Discussion, pp. 303-331.
303. HAMMAR, J. A. Ist die Verbindung zwischen den Blastomeren wirklich protoplasmatisch und primär? *Arch. mikr. Anat.* lv, pp. 313-336, 1 pl.
304. HAMY, E. T. Le père de la zoologie française.—Pierre Gilles, D'Albi. *Arch. Mus. Paris* ii (4th Ser.), pp. 1-24.
305. HANDLIRSCH, A. Die Verwerthung überschüssiger Spermatozoen im Organismus weiblicher Insecten. *Verh. Ges. Wien* l, pp. 105-112, 3 figg.
306. HARGITT, C. W. Variation among Hydromedusæ. *P. Amer. Ass.* xlix, pp. 203-206.
307. —. A review of the problem of sex cells in the Hydromedusæ. *T. c.* pp. 240-242.
308. —. Variation among Hydromedusæ. *Science* xii, pp. 340-342.
309. \*HARRINGTON, N. R. & LEAMING, E. The reaction of *Amæba* to lights of different colours. *Amer. J. Physiol.* iii, pp. 9-18.
310. HARTOG, M. On a peptic zymase in young embryos. *Rep. Brit. Ass.* 70th meeting, p. 786.  
HASSELBALCH, K. [See BOHR & HASSELBALCH (73).]  
HASWELL, W. A. [See PARKER & HASWELL (536).]
311. \*HEADLEY, F. W. Problems of Evolution. 8vo, London, 373 pp.
312. HEAPE, W. The "sexual season" of mammals and the relation of the "pro-oestrus" to menstruation. *Quart. J. Micr. Sci.* xlv, pp. 1-70.
313. HEFFERAN, MARY. Variations in jaws of *Nereis limbata*. *P. Amer. Ass.* xlix, pp. 206 & 207.
314. HEIDENHAIN, M. Ueber die Centralkapseln und Pseudochromosomen in den Samenzellen von *Proteus*, sowie über ihr Verhältniss zu den Idiozomen, Chromomitosen und Archoplasmenschleifen. Nebst einem Anhang: Orientirungstabelle über die wabigen, fädigen und membranösen Differenzirungen des Zellkörpers. *Anat. Anz.* xviii, pp. 513-550, 8 figg.
315. \*HEIDER, K. VON. Das Determinationsproblem (Referat). *Verh. Deutsch. zool. Ges.* x, Jhrsvers. pp. 45-97.  
— [See KORSCHULT & HEIDER (396).]

316. \*[HEMPRICH, F. W. & C. G. EHRENBURG.] *Symbolæ physicae seu Icones adhuc ineditæ corporum animalium novorum aut minus cognitum quæ ex itineribus per Libyam, Aegyptum, Nubiam, Dongolam, Syriam, Arabiam, et Habbesiniam publico institutis sumptu F. G. H. et Chr. G. E. Studio annis MDCCCXX-MDCCCXXV redierunt. Zoologica publico usui obtulerunt O. Carlgren, F. Hilgendorf, E. von Martens, P. Matschie, G. Tornier, W. Weltuer. Folio, Berlin, 32 pls.*
317. HENNEBERG, B. Das Bindegewebe in der glatten Muskulatur und die sogenannten Intercellularbrücken. *Anat. Hefte* xiv, pp. 301-314, 1 pl. and 3 figg.
318. HENNEGUY, L. F. E. G. Balbiani, notice biographique. *Arch. anat. micr.* iii, pp. i-xxxvi, portrait [1823-1899].
319. HERBST, C. Ueber das Auseinandergehen von Furchungs- und Gewebezellen in kalkfreiem Medium. *Arch. Entwicklmech.* ix, pp. 424-463, 2 pls.
320. HERFORT, K. Die Reifung und Befruchtung des Eies von *Petromyzon fluviatilis*. *Arch. mikr. Anat.* lvii, pp. 54-95, 3 pls.
321. HERLITZKA, A. Recherches sur la transplantation. La transplantation des ovaires. *Arch. ital. Biol.* xxxiv, pp. 89-106.
322. —. Quelques remarques à propos de la transplantation des ovaires. *T. c.* pp. 106-110.
323. —. Einiges über Ovarientransplantation. *Biol. Centrbl.* xx, pp. 619-624.
324. \*—. Ricerche sul trapianto delle ovaia. *Giorn. Acc. Med. Torino* lxxiii, pp. 104-108.
325. HERTWIG, O. Die Entwicklung der Biologie im 19 Jahrhundert Vortrag Vers. deutsch. Naturf. u. Aerzte, zu Aachen, 1900. 8vo, Jena, p. 31.
326. —. Die Elemente der Entwicklungsgeschichte des Menschen und der Wirbelthiere. Anleitung und Repetitorium für Studierende und Aerzte. 8vo, Jena, 406 pp., 332 figg.
327. —, VON LA VALETTE ST GEORGE, WALDEYER, W. Johannes Müller zum Gedächtnis. *Arch. mikr. Anat.* lv, pp. i-x, 1 pl.
328. HERTWIG, R. Lehrbuch der Zoologie, 5<sup>te</sup> ungearb. Aufl. 8vo, Jena, xii+622 pp., 570 figg.
329. \*—. Mit welchem Recht unterscheidet man geschlechtliche und ungeschlechtliche Fortpflanzung. *SB. Ges. München* xv (1899), pp. 142-153.
330. \*—. Ueber physiologische Degeneration bei Protozoen. *T. c.* xvi, pp. 88-94.  
HESCHELER, K. [See LANG, A. (404).]
331. HESSE, H. Neuere Untersuchungen zur Histologie und Histogenese des Muskelgewebes. Zusammenfassende Uebersicht. *Zool. Centrbl.* vii, pp. 637-649.
332. —. Untersuchungen über die Organe der Lichtempfindung bei niederen Thieren. vi. Die Augen einiger Mollusken. *Zeitschr. wiss. Zool.* lxxviii, pp. 379-477, 8 pls. and 1 fig.
333. HILL, A. Considerations opposed to the "Neuron Theory." *Brain* xxiii, pp. 657-690, 5 pls.

334. HILL, CH. Developmental history of primary segments of the vertebrate head. Zool. Jahrb. xiii, pp. 393-446, 3 pls. and 4 figg.
335. HILL, C. Two epiphyses in a four-day chick. Bull. N. W. Univ. Med. School, Nov. 1900, 7 pp., 6 figg.
336. \*HIRTH, G. Entropie der Keimsysteme und erbliche Entlastung. 8vo, München, 175 pp.  
Review by W. A. NAGEL, Zool. Centrbl. vii, p. 384.
337. HIS, W. Lecithoblast und Angioblast der Wirbelthiere. Histo-genetische Studien. Abh. Sachs. Ges. (math. phys. Cl.), No. iv, 1900, pp. 175-328, 102 figg.
338. —. Ueber die sogenannte Amitose. Verh. Anat. Ges. xiv, Vers. Anat. Anz. xviii, Ergänzg. Hft., pp. 52-60.
339. \*HOFMANN, M. Zur vergleichenden Anatomie der Gehirn- und Rückenmarksarterien der Vertebraten. Zeitschr. Morphol. ii, pp. 247-322, 4 pls. and 7 figg.
340. HOLLBORN, K. & H. F. ANGUS. The history and theory of staining. Ill. Annual Microsc. 1900, pp. 25-27.
341. HOLMGREN, E. Noch weitere Mittheilungen über den Bau der Nervenzellen verschiedener Tiere. Anat. Anz. xvii, pp. 113-129, 17 figg.
342. —. Von den Ovocyten der Katze. Anat. Anz. xviii, pp. 63-69, 8 figg.
343. —. Weitere Mittheilungen über die "Saftkanälchen" der Nervenzellen. T. c. pp. 290-296, 4 figg.
344. —. Studien in der feineren Anatomie der Nervenzellen. Anat. Hefte, 1 Abh. xv, pp. 1-89, 14 pls., 2 figg.
345. HONORÉ, CH. Recherches sur l'ovaire du lapin. I. Note sur les corps de Call et Exner et la formation du liquor folliculi. II. Recherches sur la formation des corps jaunes. Arch. Biol. xvi, pp. 537-562, 1 pl., pp. 563-599, 3 pls.
346. —. Recherches sur l'ovaire du lapin. III. Note sur les follicules de de Graaf à plusieurs ovules. Arch. Biol. xvii, pp. 489-497, 1 pl.
347. \*HOUSSAY, F. La forme et la vie. Essai de la méthode mécanique en zoologie. Paris, 924 pp., 782 figg.
348. HUBER, G. C. A contribution on the minute anatomy of the sympathetic ganglia of the different classes of Vertebrates. J. Morphol. xvi, pp. 27-90, 3 pls. and 3 figg.
349. HUTTON, F. W. New Darwinism. Science xi, pp. 588 & 589.
350. HUXLEY, L. Life and Letters of Thomas Henry Huxley. London, 8vo, 1st vol. viii + 503 pp. with 5 pls., 2nd vol. vi + 504 pp. with 7 pls.
351. [HUXLEY, T. H.] Lessons in Elementary Physiology. Enlarged and revised edition: edited by Sir M. Foster and Dr Sheridan Lea. London, xxiv + 611 pp.
- 351A. HYATT, A. Some governing factors usually neglected in biological investigations. Biol. Lect. Wood's Holl for 1899, pp. 127-156.
352. IHERING, H. VON. The history of the neotropical region. Science xii, pp. 857-864.
353. ILYIN, P. Das Gehörbläschen als Gleichgewichtsorgan bei den Pterotracheidæ. Centrbl. Physiol. xiii, pp. 691-694.

354. IRVINE, R. On the mechanical and chemical changes which take place during the incubation of eggs. Rep. Brit. Ass. 70th meeting, pp. 787 & 788.
355. ISHIKAWA, C. Further observations on the nuclear division of *Noctiluca*. J. Coll. Sci. Univ. Tokyo xii, dp. 243-262, 1 pl.
356. \*ISOLA, G. DELL'. Le modificazioni evolutive della cellule nervosa. Int. J. Anat. xvii, pp. 367-384, 1 pl.
357. JACOBI, A. Verbreitung und Herkunft der höhern Thierwelt Japans. Zool. Jahrb. xxx, pp. 463-478, 1 map.
358. JANSSENS, J. A. Rapprochements entre les cinèses polliniques et les cinèses sexuelles dans le testicule des Tritons. Anat. Anz. xvii, pp. 520-524, 10 figg.
359. \*JAQUET, M. Anatomie comparée du système nerveux sympathique cervical dans la série des Vertébrés. Arch. Sci. Med. Paris 1900, pp. 162-229, 29 figg.
360. JENNINGS, H. S. Studies on reactions to stimuli in unicellular organisms. v. On the movements and motor reflexes of the Flagellata and Ciliata. Amer. J. Physiol. iii, pp. 229-260, 15 figg.
361. —. Studies on reactions to stimuli in unicellular organisms. vi. On the reactions of *Chilomonas* to organic acids. T. c. pp. 397-403.
362. —. On the motor reactions of Flagellata and Ciliata. [Abstract.] Science xi, p. 247.
363. —. Reactions of Infusoria to chemicals. Amer. Natural. xxxiv, pp. 259-265.
364. —. A report of work on the Protozoa of Lake Erie, with especial reference to the laws of their movements. Rep. U. S. Fish. Comm. for 1899, pp. 105-114.
365. —. The behaviour of unicellular organisms. Biol. Lect. Wood's Holl for 1899, pp. 93-112.
366. JENSEN, P. Ueber den Aggregatzustand des Muskels und der lebendigen Substanz überhaupt. Arch. ges. Physiol. lxxx, pp. 176-228.
367. —. In Sachen des Aggregatzustandes der lebendigen Substanz. Arch. ges. Physiol. lxxxiii, pp. 172-180.
368. JOHNSON, R. H. & HALL, R. W. *Palæmonetes* and Salinity; an experimental study in evolution. Science xi, pp. 177-180.
369. \*JOLLY, J. Recherches sur la division indirecte des cellules lymphatiques granuleuses de la moelle des os. Arch. anat. micr. iii, pp. 168-228, 2 pls.
370. —. Karyokinèse des globules blancs dans la lymphe péritonéale du rat. C.R. Soc. Biol. lii, pp. 710 & 711.
371. JOSEPH, H. Zur Kenntnis der Neuroglia. Anat. Anz. xvii, pp. 354-357.
372. \*KAESTNER, S. Embryologische Forschungsmethoden. 8vo, Leipzig, 30 pp.
- KALBERLAH, A. [See SCHÖNICHEN & KALBERLAH (642).]
373. \*KARSCH, F. Päderastie und Tribadie bei Thieren. Auf Grund der Literatur zusammengestellt. Sep. fr. Jahrb. f. sex. Zwischenstufen, 1900, 8vo, Leipzig, 40 pp.



## TITLES.

Gen. Sub. 23

374. KAZZANDER, G. Sul significato dei vasi nel processo della ossificazione encondrale. *Anat. Anz.* xviii, pp. 305-323, 2 figg.
375. KEEBLE, F. W. & GAMBLE, F. W. The colour-physiology of *Hippolyte varians*. *P. R. Soc. London* lxx, pp. 461-468.  
[See GAMBLE & KEEBLE (253).]
376. \*KEIBEL, F. Normen tafeln zur Entwicklungsgeschichte der Wirbelthiere. 2 Hft. Normen tafel zur Entwicklungsgeschichte des Huhnes (*Gallus domestica*), von F. Keibel und Karl Abraham. 4to, Jena, 132 pp., 3 pls.
377. KEISSLER, C. VON. Das Plankton des (unteren) Lunzer Sees in Nieder-Oesterreich, nebst einigen Bemerkungen über die Uferregion dieses Sees. *Verh. Ges. Wien* i, pp. 541-552.
378. KERR, J. GRAHAM. Note on hypotheses as to the origin of paired limbs of vertebrates. *P. Cambridge Soc.* x, pp. 227-235.
379. KIDD, W. Design in Nature's Story. 8vo, London, ix + 165 pp.
380. —. The significance of the hair-slope in certain mammals. *P. Zool. Soc. London* 1900, pp. 676-686, 3 figg.
381. KJANIZIN, —. Nouvelles expériences sur l'influence de l'air stérilisé sur les animaux. *Arch. Biol.* xvi, pp. 663-684, pl. xxviii.
382. KING, HELEN D. Further studies on regeneration in *Asterias vulgaris*. *Arch. Entwicklmech.* ix, pp. 724-737, 19 figg.
383. KINGSLEY, J. S. The Ossicula auditus. *Tufts Coll. Stud.*, No. 6, pp. 203-274, 2 pls.
384. KLAATSCH, H. Das Problem der Abstammung des Menschen. *Ber. Senckenberg. Ges.* 1900, pp. cxxix-cxxxiv.
385. \*—. Grundzüge der Lehre Darwin's. Allgemein verständlich dargestellt. 8vo, Mannheim, 175 pp.
386. \*KNAPP, P. Ueber Heilung von Linsenverletzungen beim Fisch. Experimentelle Studie. *Zeitschr. f. Augenheilk.* iii, pp. 510-516, 1 pl.
387. KOBELT, W. Pontus und Mittelmeer. Vortrag. *Jahrb. nassau. Ver.* lii, pp. 99-113.
388. \*KOBERT, H. U. Ueber das mikrokristallographische Verhalten des Wirbelthierblutes. 2 verm. u. verbess. Abdruck aus d. *Zeitschr. ang. mikr.* v, 8vo, Leipzig, 67 pp., 9 pls. with 33 figg.
389. \*KÖLLIKER, A. VON. Zur Ehrung des grossen Lazzarus Spallanzani. Primo centenario Lazzaro Spallanzani. 8vo, Reggio-Emilia, vol. i, pp. 143-145.
390. KOFOID, C. A. The plankton of Echo River, Mammoth Cave. *Tr. Amer. Micr. Soc.* xxi, pp. 113-126.
391. —. A preliminary account of some of the results of the Plankton work of the Illinois Biological Station. *Science* xi, pp. 255-258.
- KOHLMEYER, O. [See FICKERT & KOHLMEYER (228).]
392. KOHN, A. Ueber den Bau und die Entwicklung der sog. Carotisdrüse. *Arch. mikr. Anat.* lvi, pp. 81-148, 2 pls.
393. KOLSTER, R. Ueber das Vorkommen von Centralkörpern in den Nervenzellen von *Cottus scorpio*. *Anat. Anz.* xvii, pp. 172 & 173, 2 figg.



394. KOPSCH, FR. Homologie und phylogenetische Bedeutung der Kupfer'schen Blase. T. c. pp. 497-509.
395. —. Ueber das Verhältnis der embryonalen Axen zu den drei ersten Furchungsebenen beim Frosch. Ein Beitrag zur Entwicklungsphysiologie. Int. J. Anat. xvii, pp. 1-26, 1 pl. and 5 figg.
396. KORSCHULT, E. & HEIDER, K. Text-book of Embryology of Invertebrates. Trans. by M. Bernard, Ed. by M. F. Woodward. 8vo, London, vol. iv, 594 pp., 198 figg.
397. \*KOSHEWNIKOW, G. A. Beiträge zur Naturgeschichte der Biene (*Apis mellifica* L.). 1 Lief. (Russian.) Denk. Kaiser. Ges. Fr. Naturw. xcix, Arbeit. d. Zool. Sektion T. xiv. 4to, Moskau, 144 pp., 3 pls.
- Summary, Zool. Centrbl. viii (1901), pp. 422-428.
398. \*KOWALEVSKY, A. Phénomènes de la fécondation chez l'*Helobdella algera* (Moquin-Tandon). Mem. Soc. zool. France xiii, pp. 66-88, 3 pls.
399. KÜNCKEL D'HERCULAIS, J. Les grands Acridiens migrants de l'ancien et du nouveau monde, du genre *Schistocerca*, et leurs changements de coloration suivant les âges et les saisons; rôle physiologique des pigments. C.R. Ac. Sci. cxxxi, pp. 958-960.
- KUHNERT, W. [See HAACKE & KUHNERT (295).]
400. KULAGIN, N. Zur Biologie der Infusorien. Physiologiste Russe i, pp. 269-275.
- Physiology of growing old.
401. KUILE, EMILE TER. Die Uebertragung der Energie von der Grundmembran auf die Haarzellen. Arch. ges. Physiol. lxxix, pp. 146-157, 2 figg.
402. KUNSTLER, J. Remarques sur certains points de l'histoire de la vie des organismes inférieurs. C.R. Ac. Sci. cxxx, pp. 1416-1418.
403. LALOU, L. Der Scheintod und die Wiederbelebung als Anpassung an die Kälte oder an die Trockenheit. Biol. Centrbl. xx, pp. 65-71.
404. LANG, A. Lehrbuch der vergleichenden Anatomie der wirbellosen Thiere. 2. umgearb. Aufl. 1 Lief. Mollusca. Bearb. von K. Hescheler. 8vo, Jena, viii + 509 pp., 410 figg.
405. LANKESTER, E. RAY. A treatise on Zoology. Part II. The Porifera and Coelentera. By E. A. Minchin, G. H. Fowler, and G. C. Bourne. With an introduction by E. Ray Lankester. 8vo, London, pp. 37 + 17 figg., The Enterocœla and Coelomata (E. Ray Lankester): pp. 178 + 97 figg., Porifera (E. A. Minchin): pp. 81 + 70 figg., Hydromedusæ and Scyphomedusæ (G. H. Fowler): pp. 84 + 37 figg., Anthozoa (G. C. Bourne): pp. 25 + 10 figg., Ctenophora (G. C. Bourne).
406. [—.] A Treatise on Zoology. Edited by E. Ray Lankester. Part III. The Echinoderma. By F. A. Bather, J. W. Gregory and E. S. Goodrich. 8vo, London, ix + 344 pp., illustrated.
407. —. Note on the morphological significance of the various phases of Hæmaphysidæ. Quart. J. Micr. Sci. xliii, pp. 581-588, 13 figg.
408. —. The significance of the increased size of the cerebrum in recent as compared with extinct Mammalia. Nature lxi, pp. 624 & 625. Reprinted from Jubilee vol. of Soc. Biol. Paris, 1899.
- LAZARUS, A. [See EHRLICH, P. (199).]
- LEAMING, E. [See HARRINGTON & LEAMING (309).]

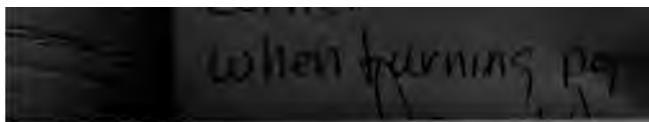


## TITLES.

Gen. Sub. 25

409. \*LEBEDINSKI, J. [Zur Höhlenfauna der Krim]. Russian. Schr. neuruss Ges. xiii, pp. 47-64, 1 pl.
410. LECONTE, P. Fonctions gastro-intestinales. Étude physiologique. Cellule xvii, pp. 285-318, 1 pl.
411. —. Action de l'eau au cours des digestions. T. c. pp. 325-335.
412. LE CONTE, J. [the late]. Outlines of the comparative physiology and morphology of animals. New York, xviii + 492 pp., illustrated.
413. LE DANTEC, F. Les caractères dans l'hérédité. Rev. Scient. xiii, pp. 33-40.
414. —. Noyaux excitable et milieux excitants. C.R. Soc. Biol. lii, pp. 43 & 44.
415. —. Homologie et Analogie. Rev. Phil. xlix, pp. 449-491.
416. \* —. L'hérédité, clef des phénomènes biologiques. Rev. gen. Sci. 1900, pp. 731-741, 798-806.
417. LEE, ALICE & PEARSON, KARL. Data for the problem of evolution in man. vi. A first study of the correlation of the human skull. P. R. Soc. London lxvii, pp. 333-337.  
See also Science xii, pp. 946-949.
418. LEE, A. BOLLES. The microtometist's vade-mecum. A handbook of the methods of microscopic anatomy. 5th ed., London, 8vo, xiv + 532 pp.
419. \*LENHOSSÉK, M. VON. Prof. Dr Victor (Géza) v. Mihalkovics (1844-1899). Int. J. Anat. xvii, pp. 88-105.
420. \*LEPECHKINE, W. Bemerkungen über den Richtungskörper und den Dotterkern in dem in der Entwicklung begriffenen Ei von *Moina rectirostris*. Nachr. Schweiz. Ges. T. xcvi, Journal d. Zool. iii, 1900, pp. 1-7, 1 pl., Zool. Centrbl. vii, pp. 934-936.
- LEVADITI. [See CHARRIN, GUILLEMONAT & LEVADITI (127).]
421. \*LEVANDER, K. M. Zur Kenntnis des Lebens in den stehenden Kleingewässern auf den Skäreninseln. Acta Soc. Faun. Fenn. xviii, 107 pp., 3 figg.
422. \* —. Ueber das Herbst- und Winter-Plankton im finnischen Meerbusen und in der Alandssee. T. c. No. 5, 25 pp., 5 figg.
423. \* —. Zur Kenntniss der Fauna und Flora finnischer Binnenseen. Acta Soc. Faun. Fenn. xix, No. 2, 55 pp., 1 fig.
424. LEVI, G. Ueber die spontane und unter dem Einflusse eines Entzündung erregenden Agens im Amphibieneie stattfindenden Veränderungen. Arch. mikr. Anat. lv, pp. 111-144, 1 pl.
- LEVINSEN, J. CHR. L. [See PETERSEN & LEVINSEN (551).]
425. LILLIE, F. R. Some notes on regeneration and regulation in Planarians. Amer. Natural. xxxiv, pp. 173-177.
426. LINVILLE, H. R. Maturation and fertilisation in Pulmonate Gastropods. Bull. Mus. Harvard xxxv, pp. 213-248, 4 pls.
427. LOEB, J. On ion-proteid compounds and their rôle in the mechanics of life phenomena. 1. The poisonous character of a pure NaCl solution. Amer. J. Physiol. iii, pp. 327-338.

428. [LOEB, J.] On the different effect of ions upon myogenic and neurogenic rhythmical contractions and upon embryonic and muscular tissue. T. c. pp. 383-396.
429. —. On the artificial production of normal larvæ from the unfertilized eggs of the sea-urchin *Arbacia*. T. c. pp. 434-471, 5 figg.
430. —. Further experiments on artificial parthenogenesis and the nature of the process of fertilization. Amer. J. Physiol. iv, pp. 178-184.
431. —. On artificial parthenogenesis in sea-urchins. Science xi, pp. 612-614.
432. —. Artificial parthenogenesis in Annelids (*Chaetopterus*). Science xii, p. 170.
433. —. On the transformation and regeneration of organs. Amer. J. Physiol. iv, pp. 60-68, 5 figg.  
— [See also NORMAN (522).]
- 433A. —. On the nature of the process of fertilization. Biol. Lect. Wood's Holl for 1899, pp. 273-282.
434. LÖNNBERG, E. Contributions to the biology of the Caspian Sea. Ofv. Ak. Forh. Årg. 57, pp. 13-29.
435. —. Note on the individual variation of the common hedgehog (*Erinaceus europæus* Linn.). Ann. Nat. Hist. v, pp. 542-544, 3 figg.
436. LOEW, O. The proteids of living matter. Science xi, pp. 930-935, 2 figg.
437. LOEWY, M. Alphonse Milne-Edwards. Rev. Scient. xiii, pp. 545 & 546.
438. LOISEL, G. Études sur la spermatogénèse chez le moineau domestique. J. Anat. Physiol. xxxvi, pp. 160-185, 4 pls. and 8 figg.
439. —. La défense de l'œuf. T. c. pp. 438-463.
440. —. L'enseignement de l'embryologie à l'étranger. T. c. pp. 649-662.
441. —. Cellules germinatives. Ovules mâles. Cellules de Sertoli. C.R. Ac. Sci. Paris cxxxi, pp. 1229-1232.
442. —. Précocité et périodicité sexuelles chez l'homme. T. c. pp. 725-727.
443. —. Le noyau dans la division directe des spermatogonies. C.R. Soc. Biol. lii, pp. 89 & 90.
444. —. Le fonctionnement des testicules chez les oiseaux. T. c. pp. 386-388, 1 curve.
445. —. Incubation d'œufs de poule retirés de leur coquille. T. c. pp. 582 & 583.
446. —. Résistance des œufs d'oiseau à une humidité excessive. T. c. pp. 661-663.
447. —. Développement d'ovules de poule incubés dans de l'albumen de canard. T. c. 757-759.
448. LONDON, E. S. De corpuscules centraux dans les cellules sexuelles et sarcomateuses. Arch. Sci. biol. viii, pp. 92-95, 7 figg.



## TITLES.

Gen. Sub. 27

449. \*LOUKIANOV, S. L'inanition du noyau cellulaire. C.R. xii Congr. internat. med. Moscou, vol. i, 1900, pp. 297-308.
450. LOYEX, Mlle MARIE. Sur la constitution du follicule ovarien des Reptiles. C.R. Ac. Sci. cxxx, pp. 48-50.
451. \*LUEDECKENS, FR. Rechts- und Linkshändigkeit. 8vo, Leipzig, vi+82 pp. [Rev. by W. L. H. Duckworth. Nature lxii, pp. 409 & 410.]
452. \*LYON, E. P. A contribution to the comparative physiology of compensatory motions. Amer. J. Physiol. iii, pp. 86-114.
453. \*LWOFF, W. N. Cours d'embryologie des vertébrés. Partie commune. Préface, Histoire des produits sexuels et fécondation. [Russian.] 8vo, Moscou, 1899, pp. 160, 42 figg.  
Review in Physiologiste Russe i, pp. 293 & 294.
454. MCGEE, W. J. Cardinal Principles of Science. P. Washington Ac. ii, pp. 1-12.
455. MCGREGOR, J. H. The spermatogenesis of *Amphiuma*. J. Morphol. xv, Supplement, pp. 57-104, pls. iv, v.
456. McKIM, W. D. Heredity and Human Progress. 8vo, New York and London, pp. viii+283.
457. MACMUNN, C. A. On spongioporphyry: the pigment of *Suberites wilsoni*. Quart. J. Micr. Sci. xliii, pp. 337-349, 1 pl.
458. McNEIL, J. Variation in the venation of *Trimerotropia*. Amer. Natural. xxxiv, pp. 471-481, 14 figg.
459. \*MANCHOT, W. Ueber freiwillige Oxydation. Beiträge zur Kenntnis der Autooxydation und Sauerstoffaktivierung. 8vo, Leipzig, 48 pp., 3 figg.  
Review by R. F. Fuchs in Biol. Centrbl. xxi, 1901, p. 188.
460. \*MARCHAND, —. Ueber die Beziehungen der pathologischen Anatomie zur Entwicklungsgeschichte, besonders der Keimblattelehre. Verh. Deutsch. Pathol. Ges. München 1899, pp. 38-105.
461. \*MARCHESINI, R. Sulla presenza e persistenza del nucleo negli eritrociti dei mammiferi adulti. Ric. fisiol. ded. al Prof. Luciani, Milano, 1900, pp. 53-56, 1 pl.
462. MAREY, C. Alphonse Milne-Edwards. Rev. Scient. xiii, pp. 546-548.
463. MARINESCO, G. Mécanisme de la sénilité et de la mort des cellules nerveuses. C.R. Ac. Sci. cxxx, pp. 1136-1139.
464. —. Recherches cytométriques et caryométriques des cellules nerveuses motrices après la section de leur cylindre. C.R. Ac. Sci. cxxxi, pp. 1237-1239.
465. —. L'évolution et l'involution de la cellule nerveuse. Rev. Scient. xiii, pp. 161-168.
466. MARSH, C. D. The plankton of freshwater lakes. Science xi, pp. 374-389.  
[A very useful general introduction to the subject.]
467. MARSHALL, G. A. K. Observations on mimicry in South African insects. Rep. Brit. Ass. 70th Meeting, pp. 793-795.
468. —. Organic Evolution. Zoologist iv, pp. 327-334.
469. —. Conscious protective resemblance. T. c. pp. 536-555.

470. MARTINOTTI, G. & TIRELLI, V. La microphotographie appliquée à l'étude de la structure des cellules nerveuses dans les ganglions intervertébraux d'animaux morts d' inanition. Verh. anat. Ges. xiv Vers. Anat. Anz. xviii, Ergänzg. Hft. pp. 89-96, 1 pl.
471. MATCHINSKY, N. De l'atrophie des ovules dans les ovaires des mammifères. Ann. Inst. Pasteur xiv, pp. 113-131, 11 figg.
472. \*MATSCHIE, P. Handwörterbuch der Zoologie und Ethnologie. Hrsg. von P. Matschie [Encyklopädie der Naturwissenschaften]. Bd. viii [t-z], 707 pp., illustrated.
473. MATTHEWS, A. P. Artificially produced mitotic division in unfertilised *Arbacia* eggs. J. Boston Soc. Med. Sci. v, pp. 13-17.
474. —. Some ways of causing mitotic division in unfertilised *Arbacia* eggs. Amer. J. Physiol. iv, pp. 343-347.
475. MATHEWS, A. The changes in structure of the pancreas cell. A consideration of some aspects of cell metabolism. J. Morphol. xv, Supplement, pp. 171-222, pls. x-xii.
- 475A. —. The physiology of secretion. Biol. Lect. Wood's Holl for 1899, pp. 165-183.
476. MAUPAS, E. Modes et formes de reproduction des Nématodes. Arch. Zool. exp. viii, pp. 463-624, 11 pls.
477. MAUREL, E. Influence des saisons sur les dépenses de l'organisme dans les pays tempérés. C.R. Soc. Biol. lii, pp. 408-411.
478. —. Influence de la température ambiante sur les dépenses de l'organisme, chez les animaux à température variable, pendant le sommeil hibernant. T. c. pp. 822-824.
479. — & DE REY-PAILHADE. Influence des surfaces sur les dépenses de l'organisme chez les animaux à température variable pendant l'hibernation. T. c. pp. 1061-1064.
480. \*MAXIMOW, A. Bemerkungen zu der Arbeit von Cl. Regaud "Evolution tératologique des cellules séminales. Les spermatides à noyaux multiples chez les mammifères." Bibliog. anat. viii, pp. 183-185.
481. \*—. Ueber die teratologischen Samenzellenformen. T. c. pp. 312-314.
482. —. Die histologischen Vorgänge bei der Heilung von Eierstocks-Verletzungen und die Regenerations-Fähigkeit des Eierstocksgewebes. Arch. pathol. clx, pp. 95-147, 1 pl.
483. \*MAXWELL, SIR HERBERT. Memories of the months. Second Series. 8vo, London, xv + 295 pp., illustrated.
484. MAYER, A. G. On the mating instinct in moths. Ann. Nat. Hist. v, pp. 183-190, Psyche ix, pp. 15-20.
- 484A. —. On the development of colour in moths and butterflies. Biol. Lect. Wood's Holl for 1899, pp. 157-164.
485. MEAD, A. D. On the correlation between growth and food supply in starfish. Amer. Natural. xxxiv, pp. 17-23, 2 figg.
486. MESNIL, F. Quelques remarques au sujet du "Déterminisme de la métamorphose." C.R. Soc. Biol. lii, pp. 147-150.
487. METALNIKOFF, S. Études sur la spermatoxine. Ann. Inst. Pasteur xiv, pp. 577-589.

488. METCHNIKOFF, EL. Recherches sur l'influence de l'organisme sur les toxines. Sur la spermotoxine et l'antispermotoxine. Quatrième Mémoire. T. c. pp. 1-12.
489. MEVES, FR. Ueber den von v. la Valette St George entdeckten Nebenkern (Mitochondrienkörper) der Samenzellen. Arch. mikr. Anat. lvi, pp. 553-606, 2 pls. and 2 figg.
490. \*MEYER, E. Lässt sich die Bildung der secundären Leibeshöhle aus der excretorischen Thätigkeit des Thierkörpers erklären? Trudui St. Peterb. Obshch. xxxi, pp. 33-51, Résumé pp. 60-64.
491. \*MEYER, HS. Der Kilimandjaro. Reisen und Skizzen. 8vo, Berlin, xvi + 436 pp., 16 photo-plates, 20 coloured, 2 maps, 103 figg. in text.  
MINCHIN, E. A. [See LANKESTER (405).]
492. MINKIEWICZ, R. Note sur le saison-dimorfisme chez le *Ceratum furca* Duj. de la mer Noire. Zool. Anz. xxiii, pp. 545 & 546, 2 figg.
493. MINOT, C. S. On a hitherto unrecognised form of blood circulation without capillaries in the organs of Vertebrata. P. Boston Soc. xxix, pp. 185-215, 12 figg.
494. \*MITCHELL, P. CHALMERS. Thomas Henry Huxley: Sketch of his Life and Work. 8vo, London, 316 pp.
495. MITROPHANOW, P. Teratogenetische Studien. III. Einfluss der veränderten Respirationsbedingungen auf die erste Entwicklung des Hühnerembryos. Arch. Entwicklmech. x, pp. 1-51, 2 pls. and 6 figg.
496. MÖBIUS, K. Ueber die Grundlagen der ästhetischen Beurtheilung der Säugethiere. SB. Ak. Berlin 1900, pp. 164-182.
497. MÖBIUS, P. J. Ueber Entartung. Grenzfragen des Nerven- und Seelenlebens. Einzel-Darstellungen.....herausgegeben von L. Loewenfeld & H. Kurella. 8vo, Wiesbaden, pp. 95-123.
498. \*MOLLIER, S. Zusammenfassendes Referat über den heutigen Stand unserer Kenntnisse und Vorstellungen von dem feinen Bau des Nervensystems. SB. Ges. Munchen xvi, pp. 49-87, 15 figg.
499. MONACO, ALBERT, PRINCE OF. Sur la deuxième campagne de la Princesse-Alice IIe. C.R. Ac. Sci. cxxx, pp. 304-306.  
MONPILLARD, F. [See RABAUD & MONPILLARD (577).]
500. MONTGOMERY, T. H., Jr. The spermatogenesis of *Peripatus (Peripatus) balfouri* up to the formation of the spermatid. Zool. Jahrb. xiv, pp. 277-368, 7 pls.  
Cf. Science xi, p. 177.
501. MONTI, R. L'hétéromorphose chez les Dendrocèles d'eau douce et en particulier chez la *Planaria alpina*. Arch. ital. Biol. xxxiii, pp. 217-324.
502. —. L'eteromorfosi nei Dendroceli d'acqua dolce ed in particolare nella "*Planaria alpina*." Rend. Ist. Lombardo xxxii (1899), pp. 1314-1321.
503. \*MORAT, J. P. Le système nerveux et la chimie animale. Rev. gen. Sci. 1900, pp. 237-243.
504. MOREAU, L. J. L'extinction des espèces animales. Bull. Soc. zool. France xxv, pp. 109-117.
505. MORGAN, C. LLOYD. The relation of stimulus to sensation. Nature lxii, pp. 278-280.

506. MORGAN, T. H. Regeneration in *Bipalium*. Arch. Entwicklmech. ix, pp. 563-586, 16 figg.
507. —. Regeneration in Planarians. Arch. Entwicklmech. x, pp. 58-119, 31 figg.
508. —. Regeneration in Teleosta. T. c. pp. 120-134, 14 figg.
509. —. Further studies on the action of salt-solutions and of other agents on the eggs of *Arbacia*. T. c. pp. 489-524, 14 figg.
510. —. Further experiments on the regeneration of the appendages of the hermit-crab. Anat. Anz. xvii, pp. 1-9, 19 figg.
511. —. The effect of strychnine on the unfertilised eggs of the sea-urchin. Science xi, pp. 178-180.
- 511A. —. Regeneration: Old and New interpretations. Biol. Lect. Wood's Hall for 1899, pp. 185-208, 4 figg.
512. —. Further experiments on the regeneration of tissue composed of parts of two species. Biol. Bull. ii, pp. 111-119, 7 figg.
513. \*MOTTA-COCO, A. Rigenerazione della glandola tiroide. Monit. Zool. ital. xi, pp. 86-99, 1 pl.
514. MUNRO, R. Stray Thoughts on the Theory of Organic Evolution, more especially as applied to Man. P. Phys. Soc. Edinb. xiv, pp. 279-298.
515. MYERS, C. S. Vitalism: a brief historical and critical review. Mind ix, pp. 218-233, 319-331.
516. MYERS, W. On the causes of the shape of non-nucleated blood corpuscles. J. Anat. Physiol. norm. path. xxxiv, pp. 351-358.  
— [See EHRLICH & LAZARUS (199).]
- NEGRI, A. [See GOLGI (288).]
517. NENÜKOW, D. Zur Frage über den Einfluss der verschiedenen Strahlen des Spectrums auf die Entwicklung und die Färbung der Tiere. Physiologische Russe i, pp. 244-250.
518. NEVEU-LEMAIRE, —. Notes de tératologie sino-japonaise. Bull. Soc. zool. France xxv, pp. 136-148?  
[Hermaphroditism, etc.]
519. NIESSING, G. Zellenstudien II. Arch. mikr. Anat. lv, pp. 63-110, 1 pl.
520. NIESSING, C. Kurze Mitteilung über Spermatogenese. Anat. Anz. xviii, pp. 43-45.
521. NORDENSKIÖLD, E. Beiträge zur Kenntnis der Tierlebens in Wasseransammlungen von wechselndem Salzgehalt. Ofv. Ak. Forh. 1900, No. 9, pp. 1115-1127, 1 fig.
522. \*NORMAN, W. W. Do the reactions of the lower animals against injury indicate pain sensations? With additional note by Jacques Loeb. Amer. J. Physiol. iii, pp. 271-284.
523. \*NUSBAUM, J. Z zagadek zycia. Szkice i odczyty z dziedziny biologii. [Riddles of Life. Biological Sketches and Lectures.] 8vo, Warszawa, 205 pp.
524. — & SIDORIAK, S. Beiträge zur Kenntnis der Regenerationsvorgänge nach künstlichen Verletzungen bei älteren Bachforellen-embryonen. (*Salmo fario* L.) Arch. Entwicklmech. x, pp. 645-684, 2 pls.



## TITLES.

Gen. Sub. 31

525. OPPEL, A. Lehrbuch der vergleichenden mikroskopischen Anatomie der Wirbeltiere. Herausgegeben von Dr Albert Oppel. Dritter Teil. 8vo, Jena, x+1180 pp., 679 figg., and 10 pls.  
— [See BÖHM & OPPEL (72).]
526. \*ORRU, E. Sullo sviluppo dell' Ipofisi. Int. J. Anat. xvii, pp. 424-434, 1 pl.
527. OSBORN, H. F. The geological and faunal relations of Europe and America during the tertiary period and the theory of the successive invasions of an African fauna. Science xi, pp. 561-574, 5 charts.
528. OSTROOUMOFF, A. Note sur le dimorphisme sexuel chez le genre *Astarte* Sow. Zool. Anz. xxiii, pp. 499 & 500.  
(In *Astarte sulcata*.)
529. OVERTON, E. Studien über die Aufnahme der Anilinfarben durch die lebende Zelle. Jahrb. wiss. Bot. xxiv, pp. 669-701.
530. PALADINO, G. Per la dibattuta questione sulla essenza del corpo luteo. Anat. Anz. xvii, pp. 451-455.
531. —. A propos de la question controversée relative à l'essence du corps jaune. Arch. ital. Biol. xxiv, pp. 228-232.
532. PAPPENHEIM, A. Färbetechnisches zur Kenntnis der *Spermatosomata hominis*. Biol. Centrbl. xx, pp. 373-382.
533. PARKE, H. H. Variation and regulation of abnormalities in *Hydra*. Arch. Entwicklmech. x, pp. 692-710, 9 figg.
534. PARKER, G. H. The neurone theory in the light of recent discoveries. Amer. Natural. xxiv, pp. 457-470, 4 figg.
535. \*— & BURNETT, F. L. The reactions of Planarians, with and without eyes, to light. Amer. J. Physiol. iv, pp. 373-385, 4 figg.
536. PARKER, T. JEFFERY (the late) & HASWELL, W. A. A Manual of Zoology. 8vo, London, xv+550 pp., 300 figg.
537. PARKER, T. JEFFERY (the late) and PARKER, W. N. Elementary Course of Practical Zoology. 8vo, London, xii+608 pp., 156 figg.
538. PAULCKE, W. Ueber die Differenzirung der Zellelemente im Ovarium der Bienenkönigin (*Apis mellifica* ♀). Zool. Jahrb. xiv, pp. 177-202, 4 pls. and 1 fig.
539. \*PAUST, J. G. Tierkunde. Eine synthetische Darstellung des Tierreichs. 6 verb. Aufl. 8vo, Breslau, 383 pp., 303 figg. and a map.
540. PEARL, R. Studies on electrotaxis. I. On the reactions of certain Infusoria to the electric current. Amer. J. Physiol. iv, pp. 90-123, 7 figg.
541. PEARSON, K. The Grammar of Science. 2nd edition, revised and enlarged. 8vo, London, xviii & 548 pp., 33 figg.
542. —. Data for the problem of evolution in man. III. On the magnitude of certain coefficients of correlation in man, etc. P. R. Soc. London lxvi, pp. 23-32.
543. —. Mathematical Contributions to the Theory of Evolution. On the Law of Reversion. T. c. pp. 140-164. On the correlation of characters not quantitatively measurable. T. c. pp. 241-244.
544. —. Data for the problem of evolution in man. IV. Note on the effect of fertility depending on homogamy. T. c. pp. 316-323.



- 544A. PEARSON, K. & LEE, A. Mathematical contributions to the Theory of Evolution. On the application of certain formulæ in the theory of correlation to the inheritance of characters not capable of quantitative measurement. P. R. Soc. London lvi, pp. 324—327.
- . [See LEE, A. (417), BEETON, YULE, & PEARSON (54).]
545. PECKHAM, G. W. & E. G. Instinct or Reason? Amer. Natural. xxxiv, pp. 817 & 818.
546. PEEBLES, F. C. Experiments in regeneration and grafting of Hydrozoa. Arch. Entwickmech. x, pp. 435—488, 82 figg.
547. PENARD, E. Essais de mérotomie sur quelques Diffugia. Rev. Suisse Zool. viii, pp. 477—490.
548. PERRIER, E. Henri et Alphonse Milne-Edwards. Arch. Mus. Paris ii (4th Série), pp. xxix—lxi.
549. \*PETELENY, IGNACY. Podręcznik zoologii. Kurs wyższy. (Manual of Zoology.) 8vo, Warszawa, vi + 298 pp., 365 figg., 1 pl.
550. PETER, K. Mittheilungen zur Entwicklungsgeschichte der Eidechse. I. Das Wachsthum des Riechgrübchens. Ein Beitrag zur Lehre vom embryonalen Wachsthum. Arch. mikr. Anat. lv, pp. 585—617, 1 pl., and 5 figg.
551. PETERSEN, C. G. JOH. & LEVINSSEN, J. CHR. L. Trawlings in the Skager Rack and the Northern Cattegat in 1897 & 1898. Rep. Danish Biol. Stat. ix, 1899, published 1900, pp. 56, 1 map.
552. \*PETIT, —. Sur la sexualité des embryons de poule en rapport avec la forme de l'œuf. C.R. Asa. Franc. xxviii, pp. 276 & 277.
- PETRUCCI, R. [See BONMARIAGE & PETRUCCI (75).]
553. PETTIT, A. Henri Beauregard (1852—1900). J. Anat. Physiol. xxxvi, pp. 139—142.
554. PHISALIX, C. M<sup>me</sup>. Travail sécrétoire du noyau dans les glandes granuleuses de la salamandre terrestre. C.R. Soc. Biol. lii, pp. 481—483.
555. PILSBRY, H. A. The genesis of mid-Pacific faunas. P. Ac. Philad. 1900, pp. 568—581.
556. PLATE, L. Ueber Bedeutung und Tragweite des Darwin'schen Selectionsprincip. 8vo, Leipzig, 183 pp.
- Sep. from Verh. Deutsch. zool. Ges.
557. POCKOCK, R. I. Secondary sexual characters and the coloration of the prong-buck. Nature lxiii, p. 157.
- [Letter.]
558. POLJAKOFF, P. Biologie der Zelle. I. Die Zellenvermehrung durch Theilung. Arch. mikr. Anat. lvi, pp. 651—699, 2 pls.
559. —. Biologie der Zelle. II. Die Reifung und Befruchtung des Eies. Op. cit. lvii, pp. 9—54, 3 pls.
560. POLICARD, A. Note sur les effets de l'ablation et de la greffe de l'organe de Bidder du crapaud. C.R. Soc. Biol. lii, pp. 846 & 847.
561. POMPILIAN, —. Automatismes des cellules nerveuses. C.R. Ac. Sci. cxxx, pp. 141—145, 5 figg.
562. \*POTONIÉ, H. Die Lebewesen im Denken des 19 Jahrhunderts. 8vo, Berlin, 28 pp., 11 portraits.



## TITLES.

Gen. Sub. 33

563. PRENANT, A. Notes cytologiques. v. Contribution à l'étude des cellules ciliées et des éléments analogues. Arch. anat. micr. iii, pp. 101-121, pl. v.
564. \*——. Les théories du système nerveux. Rev. gen. Sci. 1900, pp. 13-30, 69-82, 10 figg.
565. PROWAZEK, S. Zell- und Kernstudien. Zool. Anz. xxiii, pp. 305-309, 5 figg.
566. ———. Versuche mit Seeigeleiern. T. c. pp. 358-360.
567. ———. Beitrag zur Pigmentfrage. T. c. pp. 477-480.
568. PRUVOT, G. L'expédition antarctique Belge. Arch. Zool. exp. viii, Notés et Revue, pp. xviii-xxvi.
569. PRZIBRAM, H. Experimentelle Studien über Regeneration. Biol. Centrbl. xx, pp. 525 & 526.
570. PUGNAT, AMÉDÉE. Note sur la régénération expérimentale de l'ovaire. C.R. Soc. Biol. lii, pp. 265 & 266.
571. \*PURNELL, C. W. The animal mind as a factor in organic evolution. Tr. N. Zealand Inst. xxxii, pp. 243-252.
572. QUINTON, R. Communication osmotique, chez l'Invertébré marin normal, entre le milieu intérieur de l'animal et le milieu extérieur. C.R. Ac. Sci. cxxxi, pp. 905-908.
573. ———. Perméabilité de la paroi extérieure de l'Invertébré marin, non seulement à l'eau, mais encore aux sels. T. c. pp. 952-955.
574. RABAUD, E. Des différenciations hétérotypiques. Processus tératologiques. C.R. Ac. Sci. cxxx, pp. 953-955.
575. \*——. La régénération et la cicatrisation dans leurs rapports avec le développement embryonnaire. Arch. gen. med. Paris 1900, pp. 362-375.
576. \*——. Qu'est-ce qu'une anomalie? Feuille Natural. xxx, pp. 101-108, 121-125.
577. \*—— & MONPILLARD, F. Atlas d'Histologie normale, Principaux tissus et organes. 8vo, Paris, 198 pp., 50 microphot. pls. in colour.
578. RABES, O. Zur Kenntnis der Eibildung bei *Rhizotrogus solstitialis* L. Zeitschr. wiss. Zool. lxvii, pp. 340-348, 1 pl., 1 fig.
579. RABL, C. Ueber den Bau und die Entwicklung der Linse. 8vo, Leipzig, vii + 324 pp., 14 pls., and 132 figg.
580. ———. Homologie und Eigenart. Verh. Deutsch. pathol. Ges. Munchen 1899, pp. 4-37, 14 figg.
581. \*——. Ueber die Grundbedingung des Fortschrittes in der organischen Natur. Vortrag gehalten in der feierl. Sitz. d. k. Akad. Wiss. Wien. 8vo, Wien, 29 pp.
582. \*RACOVITZA, E. G. Vers le Pol Sud. Conférence. Caus. Soc. zool. France 1900, No. 6, pp. 175-242, 1 portrait, 52 figg.
583. RAFFAELE, F. Per la genesi dei nervi da catene cellulari. Anat. Anz. xviii, pp. 337-344, 11 figg.
584. \*RANDOLPH, R. L. The regeneration of the crystalline lens. An experimental study. Johns Hopkins Hosp. Rep. ix, pp. 237-263, 6 figg.

585. RANVIER, L. Sur l'activité plastique des cellules animales. C.R. Ac. Sci. cxxx, pp. 19 & 20.
586. RASPAIL, X. Causes diverses du dépeuplement de certaines rivières. Rev. Scient. xiv, pp. 651-654.
587. RAUBER, A. Das Geschlecht der Frucht bei Graviditas extrauterina. Anat. Anz. xvii, pp. 455-457.
588. REDDINGIUS, R. A. Ueber die Kernkörperchen. Arch. pathol. clxii, pp. 206-221, 2 pls.
589. REGAUD, CL. Quelques détails sur la division amitotique des noyaux de Sertoli chez le rat. Sort du nucléole - Deux variétés d'amitose: équivalence ou non-équivalence des noyaux-fils. Ver. Anat. Ges. xiv, Vers. Anat. Anz. xviii, Ergänzt. Hft. pp. 110-124, 15 figg.
590. —. Dégénérescence des cellules séminales chez les mammifères en l'absence de tout état pathologique. C.R. Soc. Biol. lii, pp. 268-270.
591. —. Evolution tératologique des cellules séminales chez les mammifères. Cellules géantes, naines et à noyaux multiples. T. c. pp. 293 & 294.
592. —. La prétendue division directe des spermatides chez les Mammifères. T. c. pp. 328 & 329.
593. —. Note sur certaines différenciations chromatiques observées dans le noyau des spermatocytes du rat. T. c. pp. 698-700.
594. —. La sécrétion liquide de l'épithélium séminal; son processus histologique. T. c. pp. 912-914.
595. —. Les phases et les stades de l'onde spermatogénétique chez les mammifères (Rat). Classification rationnelle des figures de la spermatogénèse. T. c. pp. 1039-1042.
- 595A. —. Direction hélicoïdale du mouvement spermatogénétique dans les tubes séminifères du rat. T. c. pp. 1042-1044, 2 figg.
596. —. Variations de la sécrétion liquide de l'épithélium séminal suivant les stades de l'onde spermatogénétique. T. c. pp. 1078-1080.
597. —. Les phénomènes sécrétoires du testicule et la nutrition de l'épithélium séminal. T. c. pp. 1102-1104.
598. \* —. Evolution tératologique des cellules séminales, les spermatides à noyaux multiples, chez les mammifères. Bibliog. anat. viii, pp. 24-42, 12 figg.
599. \* —. A propos des cellules séminales tératologiques. T. c. pp. 224-226.  
Against Maximow.
600. REH, L. Versuche über die Widerstandsfähigkeit von Diaspinnen gegen äussere Einflüsse. Biol. Centrbl. xx, pp. 741-751, 799-815.
601. REIGHARD, J. The biological sciences and the people. Science xi, pp. 966-972.
602. REINKE, FR. Ueber den mitotischen Druck. Untersuchungen an den Zellen der Blutkapillären der Salamanderlarve. Arch. Entwickl.-mech. ix, pp. 321-328, 1 pl. and 1 fig.
603. —. Zum Beweis der trajektoriellen Natur der Plasmastrahlungen. Ein Beitrag zur Mechanik der Mitose. T. c. pp. 410-423, 11 figg.

604. RETTERER, E. Similitude des processus histogénétiques chez l'embryon et l'adulte. J. Anat. Physiol. xxxvi, pp. 358-362.
605. —. Spécificité et transformation cellulaires. C.R. Soc. Biol. lii, pp. 655-659.
- REY-PAILHADE, — DE. [See MAUREL & DE REY-PAILHADE (479).]
606. RICHARD, J. Les campagnes scientifiques de S. A. S. le Prince Albert de Monaco. Exposition univers. de 1900 Principauté de Monaco. 8vo, Monaco, 140 pp., 55 figg.
607. \*RISCHPLER, —. Ueber Gewebsveränderungen durch Kälte. Verh. Deutsch. pathol. Ges. München 1899, pp. 166-175, 5 figg.
608. \*RITTER, W. E. & CROCKER, G. R. Multiplication of rays and bilateral symmetry in the 20-rayed starfish, *Pycnopodia helianthoides* (Stimpson). P. Washington Ac. ii, pp. 247-274, 2 pls.
609. RÖMER, FR. & SCHAUDINN, FR. Fauna Arctica. Eine Zusammenstellung der arktischen Thierformen mit besonderer Berücksichtigung des Spitzbergen-Gebietes auf Grund der Ergebnisse der Deutschen Expedition in das Nördliche Eismeer im Jahre 1898. Unter Mitwirkung zahlreicher Fachgenossen hrsg. von Fritz Römer und Fritz Schaudinn. 1 Bd. 1 Lief. 4to, Jena, 178 pp., 7 pls., 2 maps, 12 figg.
610. RÖRIG, A. Ueber Geweihentwicklung und Geweihbildung. I. Abschnitt. Die phylogenetische Gesetze der Geweihentwicklung. Arch. Entwicklmech. x, pp. 625-617, 8 pls.
611. —. Ueber Geweihentwicklung und Geweihbildung. II. Abschnitt. Die Geweihentwicklung in histologischer und histogenetischer Hinsicht. T. c. pp. 618-644, 1 pl.
612. ROGEEZ, E. Reflexions au sujet des expériences de Mlle Barthelet sur la télégonie. C.R. Ac. Sci. pp. 1240 & 1241.
- Cf. A. GIARD, Observations à propos de cette note. T. c. pp. 1241-1243.
613. ROHON, J. V. Ueber Parietalorgane und Paraphysen. SB. Bohmisch. Ges. for 1899, No. 33, pp. 15, 6 figg.
614. ROLLETT, A. Die Localisation psychischen Vorgänge im Gehirne. Arch. ges. Physiol. lxxix, pp. 303-311.
- 614A. —. Physiologische Verschiedenheit der Muskeln der Kalt- und Warmblüter. Centrbl. Physiol. xiii, pp. 721-723.
615. —. Weitere Bemerkungen über die physiologische Verschiedenheit der Muskeln der Kalt- und Warmblüter. Centrbl. Physiol. xiv, pp. 435-438.
616. ROLLINAT, R. & TROUESSART, E. Sur le sens de la direction chez les Chiroptères. C.R. Soc. Biol. lii, pp. 604-607.
617. ROPE, G. T. Remarks relating to mimicry. Zoologist iv, pp. 85 & 86.
- Referring to WITCHELL, C. A. (752).
- [ROSENSTOCK, R. [See SCHMEIL, O. (637).]
618. ROUX, W. Bemerkungen zu O. Schultze's Arbeit über die Nothwendigkeit der "freien Entwicklung" des Embryo sowie der "normalen Gravitationswirkung" zur Entwicklung. Arch. Entwicklmech. ix, pp. 479-493.

619. [Roux, W.] Berichtigungen zu O. Schultze's Arbeit: "Ueber das erste Auftreten der bilateralen Symmetrie im Verlaufe der Entwicklung." T. c. pp. 494-499.
620. —. Berichtigungen zu O. Schultze's jüngstem Aufsatz über die Bedeutung der Schwerkraft für die Entwicklung des thierischen Embryo und Anderes. Arch. Entwicklmech. x, pp. 244-255.
621. —. Professor Dr Gustav Born (1851-1900). T. c. pp. 256-262.
622. Russo, A. Sull' aggruppamento dei primi elementi sessuali nelle larve di *Antedon rosacea* Linck., e sul valore che ne deriva per i rapporti di affinità tra Crinoidea, Holothuroidea, e Cystoidea. Atti Acc. Lincei (Rend.) ix, pp. 361-366, 2 figg.
623. \*—. Sulla funzione renale dell' organo genitale delle Oloturie. Ric. anat. Roma viii, pp. 83-91, 1 pl.  
Summary in Zool. Centrbl. viii (1901), pp. 275 & 276.
624. RYWOSCH, D. Ueber die Bedeutung der Salze für das Leben der Organismen. Biol. Centrbl. xx, pp. 413-421.
625. SACERDOTTI, C. Erythrocyten und Blutplättchen. Anat. Anz. xvii, pp. 249-253.
626. SALA, G. Beitrag zur Kenntnis der markhaltigen Nervenfasern. Anat. Anz. xviii, pp. 49-55, 1 pl.
627. SALTYSKOW, S. Ueber Transplantation zusammengesetzter Theile. Arch. Entwicklmech. ix, pp. 329-409, 3 pls.
628. SAMPSON, L. V. Unusual modes of breeding and development among Anura. Amer. Natural. xxxiv, pp. 687-715.
629. \*SANSON, A. L'Espèce et la Race, en biologie générale. 8vo, Paris, viii + 320 pp.
630. SARGENT, P. E. Reissner's fibre in the canalis centralis of Vertebrates. Anat. Anz. xvii, pp. 33-44, 3 pls. and 1 fig.  
Science xi, p. 180.
- SCHAUDINN, FR. [See RÖMER & SCHAUDINN (609).]
631. SCHENCK, F. Ueber den Aggregatzustand der lebendigen Substanz, besonders des Muskels. Arch. ges. Physiol. lxxxi, pp. 584-594.
632. SCHILLINGS, C. G. Das Thierleben in Aequatorial-Ostafrika. Verh. Ges. Wien I, pp. 524 & 525.  
Unfortunately, only a brief report of an important address.
633. SCHIMKEWITSCH, WL. Experimentelle Untersuchungen an meroblastischen Eiern. i. Cephalopoden. Zeitschr. wiss. Zool. lxvii, pp. 491-528, 4 pls.
634. —. Nachtrag zu den "Experimentellen Untersuchungen an meroblastischen Eiern." Zeitschr. wiss. Zool. lxviii, pp. 478 & 479.
635. \*SCHIMKEWITSCH, M. [Die biologischen Grundzüge der Zoologia.] St Petersburg, 382 pp., 246 figg.  
In Russian. Review in Zool. Centrbl. viii (1901), pp. 553 & 554.  
Treats of the organism, the cell, taxonomy, development, experimental embryology, heredity, etc.
636. SCHLATER, G. Monoblasta—Polyblasta—Polycellularia, Phylogenetische Studie. Biol. Centrbl. xx, pp. 508-525, 544-556.
637. \*SCHMEIL, O. Leitfaden der Zoologie. 8vo, Stuttgart, viii + 304 pp., illustrated.

Wohlfarth, pp.

TITLES.

Gen. Sub. 37

638. [SCHMEIL, O.] Text-book of Zoology, treated from a biological standpoint. Trans. by R. Rosenstock, Edited by J. T. Cunningham. Part I. Mammals. 8vo, London, vii+138 pp. Part II. Birds to Fishes, 312 pp., illustrated.
639. SCHOCKAERT, R. Nouvelles recherches sur la maturation de l'ovocyte de premier ordre du *Thysanozoon brocchi*. Anat. Anz. xviii, pp. 30-33, 6 figg.
640. \*SCHOENFELD, H. La spermatogenèse chez le taureau. Communication préliminaire. Bibliog. anat. viii, pp. 74-98, 31 figg.
641. \*SCHOENICHEN, W. Ueber Thier und Menschenseele. Zeitschr. Naturw. Stuttgart lxxiii, pp. 225-266, 10 figg.
642. \* — & KALBERLAH, A. B. Eysers's Einfachste Lebensformen des Tier- und Pflanzenreiches. Naturgeschichte der mikroskopischen Süßwasserbewohner. III. vollst. Neubearb. u. vermehrte Aufl. 8vo, Braunschweig, viii+554 pp., 16 pls., with over 700 figg.
643. SCHUBERG, A. Bütschli's Untersuchungen über den Bau quellbarer Körper und die Bedingungen der Quellung. Zusammenfassende Uebersicht. Zool. Centrbl. vii, pp. 713-740.
644. SCHULZE, F. E. Das Tierreich. 9 Lief. Trochilidæ bearb. von Ernst Hartert. 8vo, Berlin, ix+254 pp., 34 figg.  
[See HARTERT, Aves (216A).]
645. SCHULTZE, O. Ueber das erste Auftreten der bilateralen Symmetrie im Verlauf der Entwicklung. Arch. mikr. Anat. lv, pp. 171-201, 2 pls. and 2 figg.
646. —. Ueber die Nothwendigkeit der freien Entwicklung des Embryo. T. c. pp. 202-230, 1 pl., 6 figg.
647. —. Zur Frage von der Bedeutung der Schwerkraft für die Entwicklung des thierischen Embryo. Arch. mikr. Anat. lvi, pp. 309-334.
648. SCHULZE, W. Die Bedeutung der Langerhans'schen Inseln im Pankreas. T. c. pp. 491-509, 1 pl.
649. SCHUMACHER, S. VON & SCHWARZ, C. Mehrkernige Eizellen und mehrreißige Follikel. Anat. Anz. xviii, pp. 1-8, 6 figg.  
SCHWARZ, C. [See VON SCHUMACHER & SCHWARZ (649).]
650. SCOTT, F. H. On the structure, micro-chemistry and development of nerve-cells, with special reference to their nuclein compounds. Tr. Canad. Inst. (semi-centennial vol.) vi (1899), pp. 405-438, 1 pl.
651. SEDGWICK, A. Variation and some phenomena connected with reproduction and sex. Science xi, pp. 881-894, 923-930.  
See Z. R. 1899.
652. \*SELIGO, A. Untersuchungen in den Stuhmer Seen. Nebst einem Anhang: Das Pflanzenplankton preussischer Seen. Von Bruno Schröder. Herausgegeben vom Westpreuss. Bot. Zool. Ver. und vom Westpreuss. Fischerei Ver. Danzig, 88 pp., 9 tables, 10 pls.
653. SELOUS, F. C. Sport and Travel, East and West. 8vo, London, ix+311 pp., illustrated.
654. \*SERVÉ, FR. Zur Beurteilung der neueren Ansichten über die Entstehung der Zwillingschwangerschaft. Dissertatio med. Strassburg, 1900, pp. 36.

655. SHELFORD, R. Observations on mimicry in Bornean insects. Rep. Brit. Ass. 70th Meeting, pp. 795-797.
656. SHERRINGTON, C. S. Experimentation on emotion. *Nature* lxii, pp. 328-331.
- SIDORIAK, S. [See NUSBAUM & SIDVRIAK (524).]
657. SIHLER, CHR. Neue Untersuchungen über die Nerven der Muskeln mit besonderer Berücksichtigung umstrittener Fragen. *Zeitschr. wiss. Zool.* lxviii, pp. 323-378, 2 pls.
658. —. Die Muskelspindeln. Kerne und Lage der motorischen Nervenendigungen. *Arch. mikr. Anat.* lvi, pp. 334-354, 1 pl.
659. \*SIMROTH, H. Ueber Selbstbefruchtung bei Lungenschnecken. *Verh. Deutsch. Ges. x Jhrsvers.* pp. 143-147, 5 figg.
660. SJÖRING, NILS. Ueber das Formol als Fixierungsflüssigkeit. Allgemeines über den Bau der lebenden Zellen. *Anat. Anz.* xvii, pp. 273-304, 3 figg.
661. \*SMITH, J. The evolution of the animal cell. *J. Amer. Med. Assoc.* xxxiv, pp. 962-967.
662. \*SNIJDERS, A. J. C. De dierenwereld. 1. De zoogdieren. 8vo, Zutphen, viii + 271 pp., 89 figg.
663. \*SOGRAFF, N. Kursus der Zoologie für Naturforscher, Mediciner, und Landwirthe [Russian]. 8vo, Moskau, xiii + 1316 pp., 1146 figg.
664. SOMMER, M. Die Brown-Séquard'sche Meerschweinchen Epilepsie und ihre erbliche Uebertragung auf die Nachkommen. *Medicin. Dissert. Jena*, 46 pp. *Beitr. Pathol. Anat.* xxvii, pp. 289-330.  
Summary by H. E. Ziegler, *Zool. Centrbl.* vii, pp. 478-480.
665. SPECHT, FR. Thierbilder-Album. Originalzeichnungen. 44 Taf. in Holzschn. ausgeführt von C. G. Specht. Folio, Stuttgart.
666. \*SPEMANN, H. Experimentelle Erzeugung zweiköpfiger Embryonen. *SB. Ges. Würzburg*, 1900, pp. 2-9.
667. SPENCER, HERBERT. Genesis of the Vertebrate Column. [Letter.] *Nature* lxii, p. 620.
668. STASSANO, H. Le rôle du noyau des cellules dans l'absorption. *C.R. Ac. Sci.* cxxx, pp. 1780-1783.
669. —. Sur la fonction du noyau dans la formation de l'hémoglobine et dans la protection cellulaire. *Op. cit.* cxxxi, pp. 298-301.
670. STEFĂNESCU, GR. Despre o reformă în nomenclatura sciințelor naturale. *Bull. Soc. Sci. Bucarest* ix, pp. 472-477.
671. STEMPELL, W. Ueber die Bildungsweise und das Wachsthum der Muschel- und Schneckenschalen. Eine kritische Erörterung der bisherigen Forschungsergebnisse. *Biol. Centrbl.* xx, pp. 595-606, 637-644, 665-680, 698-703, 731-741, figg.  
[Of general biological interest.]
672. STEUER, A. Das Zoo-Plankton der "alten Donau" bei Wien. *Biol. Centrbl.* xx, pp. 25-32, 2 figg.
673. ŠTOLC, A. Beobachtungen und Versuche über die Verdauung und Bildung der Kohlenhydrate bei einem amöbenartigen Organismus, *Pelomyxa palustris*. *Zeitschr. wiss. Zool.* lxviii, pp. 625-668, 2 pls.



## TITLES.

Gen. Sub. 39

674. STÖLZLE, R. K. E. v. Baer's Stellung zum Problem der Zweckmäßigkeit. Biol. Centrbl. xx, pp. 34-45.
675. —. Nochmals Karl Ernst v. Baer's Stellung zur Frage nach der Abstammung des Menschen. Biol. Centrbl. xx, pp. 465-479, 503-508.
676. STONE, A. J. Some results of a Natural History Journey to Northern British Columbia, Alaska, and the North-West Territory, in the interest of the American Museum of Natural History. Bull. Amer. Mus. xiii, pp. 31-62.
- STROBELL, E. C. [See FOOT & STROBELL (239).]
677. STUDNIČKA, F. K. Ueber Flimmer- und Cuticularzellen mit besonderer Berücksichtigung der Centrosomenfrage. SB. Böhmisch. Ges. for 1899, No. 35, 22 pp., 1 pl.
678. —. Beiträge zur Kenntnis der Ganglienzellen. I. Ein neuer Befund von Centrosomen; die intracellulären Kanälchen. T. c. 6 pp., 1 fig.
679. —. Untersuchungen über den Bau des Ependyms der nervösen Centralorgane. Anat. Hefte xv, pp. 303-431, 10 pls. and 13 figg.
680. —. Zur Kenntnis der Parietalorgane und der sog. Paraphyse der niederen Wirbeltiere. Verh. Anat. Ges. xiv Vers. Anat. Anz. xviii, pp. 101-110, 1 fig.
681. \*SUMPNER, F. B. Kupffer's vesicle and its relation to gastrulation and concrescence. Mem. New York Ac. ii, pp. 48-83, 34 figg.
682. TERRE, L. Métamorphose et phagocytose. C.R. Soc. Biol. lii, pp. 158 & 159.
683. \*THAYER, A. H. Arguments against the Banner Mark theory. Auk xvii, pp. 108-113.  
[Directive colouration.]
684. \*THILENIUS, G. Die Vererbung des Fettschwanzes bei *Ovis platyura*. Int. J. Anat. xvii, pp. 109-124, 5 figg.
685. THILO, O. Ergänzungen zu meiner Abhandlung "Sperrvorrichtungen im Tierreiche." Biol. Centrbl. xx, pp. 452-461, 7 figg.
686. THOMANN, H. Un cas de symbiose de fourmis et de chenilles. C.R. Soc. Helvet. in Arch. Phys. Nat. x, pp. 565 & 566.
687. THOMPSON, I. C. Report on two collections of tropical and more northerly plankton. Tr. Liverp. biol. Soc. xiv, pp. 262-294, 1 pl., 3 figg.
688. THOMSON, J. ARTHUR. Facts of Inheritance. Nature lxii, pp. 331-334.
- 688A. THORNDIKE, E. Instinct. Biol. Lect. Wood's Holl for 1899, pp. 57-67.
- 688B. —. The associative processes in animals. T. c. pp. 69-91, 4 figg.
689. TIRELLI, V. De l'influence des basses températures sur l'évolution de l'embryon de poulet. Arch. ital. Biol. xxxiii, pp. 37-50.  
— [See MARTINOTTI & TIRELLI (470).]
690. TODARO, F. La moltiplicazione delle sfere di segmentazione dell'ovo nelle Salpe. Verh. Anat. Ges. xiv Vers. Anat. Anz. xviii. Ergänzg. Heft., pp. 194-202, 3 figg.



691. TONKOFF, W. Experimentelle Erzeugung vom Doppelbildungen bei *Triton*. SB. Ak. Berlin 1900, pp. 794-797, 1 fig.
692. —. Die Entwicklung der Milz bei den Amnioten. Arch. mikr. Anat. lvi, pp. 392-458, 3 pls. and 8 figg.
693. TORNIER, G. Das Entstehen von Käfermissbildungen, besonders Hyperanteunnie und Hypermelie. Arch. Entwicklmech. ix, pp. 501-562, 1 pl. and 32 figg.
694. —. Ueber Amphibien Gabelschwänze und einige Grundgesetze der Regeneration. Zool. Anz. xxiii, pp. 233-256, 12 figg.
695. TOWER, W. L. The development of the pigment and colour pattern in Coleoptera. Science xi, pp. 175-177.
696. TOWLE, E. A study in the heliotropism of *Cypridopsis*. Amer. J. Physiol. iii, pp. 345-365.
697. TRAQUAIR, R. H. The Bearings of Fossil Ichthyology on the Problem of Evolution; being the Address to the Zoological Section (Brit. Assoc.). Geol. Mag. vii, pp. 463-470, 516-524. Rep. Brit. Ass. 70th Meeting, pp. 768-783. Nature lxii, pp. 502-508.
698. \*TRIPS, M. Ueber die Zeichnung und Färbung der Wald- und Schneehühner in ihrer Bedeutung zur Phylogenie und Systematik. Inaug. Dissertation Tübingen.  
[Review by M. Gräfin von Linden in Biol. Centrbl. xxi (1901) pp. 106-109.]
- TROUESSART, E. [See ROLLINAT & TROUESSART (616).]
699. \*TURDY, K. Die Vermehrung und Fortpflanzung im Reiche der Thiere. Wien, 68 pp., 27 figg.
700. TURNER, A. J. The nature and origin of living matter (protoplasm). P. R. Soc. Queensland xv, pp. 27-45.
701. TURNER, SIR W. Inaugural Address. Brit. Association, Bradford. Nature lxii, pp. 440-449. Rep. Brit. Ass. 1900, pp. 3-30. Science xii, pp. 385-396.
702. —. Les progrès de la Biologie. Rev. Scient. xiv, pp. 417-432.
703. UEXKÜLL, S. VON. Ueber die Stellung der vergleichenden Physiologie zur Hypothese der Tierseele. Biol. Centrbl. xx, pp. 497-502.  
VON LA VALETTE ST GEORGE. [See HERTWIG, O., VON LA VALETTE ST GEORGE & WALDEYER (327).]
704. VARIGNY, H. DE. Les animaux chimistes. Rev. Scient. xiv, pp. 809-811.
705. VERHOEFF, C. W. Ueber Doppelmännchen bei Diplopoden. Zool. Anz. xxiii, pp. 29-31, 2 figg.
706. VERNON, H. M. Cross Fertilisation among Echinoids. Arch. Entwicklmech. ix, pp. 464-478, 7 figg.
707. —. Certain Laws of Variation. I. The reaction of developing organisms to environment. P. R. Soc. London lxvii, pp. 85-101.
708. VERWORN, M. Das Neuron in Anatomie und Physiologie. Vortrag 72 Vers. deutsch. Naturf. u. Aerzte zu Aachen, Sept. 1900. 8vo, Jena, pp. 54, 22 figg.
709. VEVEY, S. ARTAULT DE. Formation du noyau cellulaire. C.R. Soc. Biol. lii, pp. 552 & 553.



## TITLES.

Gen. Sub. 41

710. VIGIER, P. Note sur le rôle du nucléole dans la sécrétion. T. c. pp. 446-448.
711. VIGNOLI, T. Psicologia Fisiologica. Rend. Ist. Lombardo, pp. 709-715.
712. VIGNON, P. Sur la signification des granulations basilaires des cils. C.R. Ac. Sci. cxxxi, pp. 1232-1234.
713. —. Différenciations cytoplasmiques, cils vibratils et cuticules. Arch. Zool. exp. viii, Notes et Revue, pp. iii-xviii, 7 figg.
714. \*—. Les cils vibratiles. Caus. Soc. zool. France, pp. 37-76, with figg.
715. VIGUIER, C. Fécondation chimique ou parthénogénèse? Ann. Sci. nat. xii, pp. 87-138.
716. —. L'hermaphroditisme et la parthénogénèse chez les Echinodermes. C.R. Ac. Sci. cxxxi, pp. 63-66.
717. —. La théorie de la fertilisation chimique des œufs, de M. Loeb. T. c. pp. 118-121.
718. VINCENT, SWALE. The carotid gland of Mammalia and its relation to the suprarenal capsule, with some remarks upon internal secretion, and the phylogeny of the latter organ. Anat. Anz. xviii, pp. 69-76.
719. \*VIRCHOW, R. Die Continuität des Lebens als Grundlage der modernen biologischen Anschauung. C.R. XII. Congr. internat. med. Moscou, vol. i, 1900, pp. 162-170.
720. VOIGT, W. Einfluss der Temperatur auf die Fortpflanzungsverhältnisse bei einem Strudelwurm, *Polycelis cornuta*. SB. neiderrhein. Ges. 1900, 1<sup>te</sup> Hälfte, pp. 19-21.
721. VRIES, HUGO DE. Sur la loi de disjonction des hybrides. C.R. Ac. Sci. cxxx, pp. 845-847.
722. —. Sur la mutabilité de l'*Oenothera lamarckiana*. Op. cit. cxxxi, pp. 561-563.  
Botanical, but of great biological interest.
723. WAGNER, F. VON. Beiträge zur Kenntniss der Reparationsprocesse bei *Lumbriculus variegatus* Gr. 1. Theil. Zool. Jahrb. xiii, pp. 603-682, 4 pls.
724. WAGNER, W. L'araignée aquatique (*Argyroneta aquatica* Cl.), son industrie et sa vie. Matériaux de psychologie comparée. [Russian article with French summary.] Bull. Soc. Moscou 1900, pp. 61-174, 1 pl. and 37 figg.
725. \*WAGNER, W. A. Note sur le mimicry chez les animaux. [Russian.] C.R. Soc. St Petersburg xxx, pp. 194-203.
726. WALDEYER, W. Kittsubstanz und Grundsubstanz, Epithel und Endothel. Arch. mikr. Anat. lvii, pp. 1-8.  
— [See HERTWIG, O., LA VALETTE ST GEORGE, & WALDEYER (327).]
727. WALLACE, ALFRED RUSSEL. Travels on the Amazon and Rio Negro: Native Tribes, Climate, Geology, Natural History of the Amazon Valley with biographical introduction. Cheap Ed. 8vo, London, 378 pp., portrait and illustration.
728. WALLACE, LOUISE B. The accessory chromosome in the spider. Anat. Anz. xviii, pp. 327-329, 5 figg.

729. WALLER, A. D. Le dernier signe de vie. C.R. Ac. Sci. cxxxi, pp. 485 & 486.
730. WARD, H. B. A plea for the study of limnobiology. Tr. Amer. Micr. Soc. xxi, pp. 201-212.
731. —. A comparative study in methods of plankton measurement. T. c. pp. 227-247, 3 pls.
732. WARREN, E. On the reaction of *Daphnia magna* (Straus) to certain changes in its environment. Quart. J. Micr. Sci. xliii, pp. 199-224, 2 figg.
733. WASMANN, E. Einige Bemerkungen zur vergleichenden Psychologie und Sinnesphysiologie. Biol. Centrbl. xx, pp. 341-348.
734. —. Vergleichende Studien über das Seelenleben der Ameisen und der höheren Thiere. Zweite, vermehrte Aufl., 8vo, Freiburg i/Br. viii + 152 pp.
735. WEISMANN, A. Ueber die Parthenogenese der Bienen. Anat. Anz. xviii, pp. 492-499.
736. WESENBERG-LUND. Von dem Abhängigkeitsverhältnis zwischen dem Bau der Planktonorganismen und dem spezifischen Gewicht des Süßwassers. Biol. Centrbl. xx, pp. 606-619, 644-656.
737. WETZEL, G. Drei abnorm gebildete Eier von *Tropidonotus natrix*. Anat. Anz. xviii, pp. 425-440, 5 figg.
738. [WHITE, GILBERT.] Natural History and Antiquities of Selborne, and a Garden Calendar. Ed. by R. Bowdler Sharpe. Introduction by S. Reynold Hole. 2 vols. 8vo, London, vol i, 452 pp., illustrated.
739. WIEDERSHEIM, R. Brutpflege bei niederen Wirbelthieren. Biol. Centrbl. xx, pp. 304-316, 321-342, 12 figg.
- Cf. \* —. Cure parentali nei Vertebrati inferiori. Riv. Sci. Biol. Como i, Nos. 11 & 12, 36 pp., 19 figg.
740. WILCOX, E. V. Human spermatogenesis. Anat. Anz. xvii, pp. 316-318.
741. WILDERS, E. Inutilité de la lécithine comme excitant de la croissance, etc. (Contre Danilewsky, B.) Cellule xvii, pp. 385-407, 1 pl.
742. WILLIAMS, S. R. The specific gravity of some fresh-water animals in relation to their habits, development, and composition. Amer. Natural. xxxiv, pp. 95-108, 3 figg.
743. WILLIAMSON, H. C. Contributions to the life history of the edible crab (*Cancer pagurus*). Rep. Fish. Board Scotland xviii, pp. 77-143, 4 pls.
- [Reproduction, Sexual Characters, Regeneration, etc.]
744. WILSON, C. B. The habits and early development of *Cerebratulus lacteus* Verrill. A contribution to physiological morphology. Quart. J. Micr. Sci. xliii, pp. 97-198, 3 pls.
- [Autotomy, regeneration, oögenesis, spermatogenesis, maturation, fertilisation, development, etc.]
745. WILSON, E. B. The cell in development and inheritance. Second edition, revised and enlarged. 8vo, New York & London, xxi + 483 pp., 194 figg.
- 745a. —. Some aspects of recent biological research. Internat. Monthly ii, pp. 74-93.
- [Origin of life, protoplasm, heredity, development, etc.]

746. WILSON, H. V. Marine Biology at Beaufort. Amer. Natural. xxxiv, pp. 339-363, 5 figg.
747. WINDLE, B. C. A. Tenth report on recent teratological literature. J. Anat. Physiol. norm. path. xxxiv, pp. 410-425.
748. WINIWARTER, JOHANNES VON. Le corpuscule intermédiaire et le nombre des chromosomes du lapin. Arch. Biol. xvi, pp. 685-707, 1 pl.
749. —. Recherches sur l'ovogenèse et l'organogenèse de l'ovaire des mammifères (Lapin et Homme). Arch. Biol. xvii, pp. 33-199, 6 pls.
750. WINKLER, H. Ueber die Furchung unbefruchteter Eier unter der Einwirkung von Extractivstoffen aus dem Sperma. Nachr. Ges. Göttingen 1900, pp. 187-193.
751. WINTER, FR. Einiges über die Deutsche Tiefsee-Expedition. Ber. Senckenberg. Ges. 1900, pp. 45-59, 4 figg.
752. WITCHELL, C. A. Stray notes on mimicry. Zoologist iv, pp. 32-36, cf. ROPE, G. T. (617).
753. —. Remarks relating to mimicry. T. c. p. 145.
754. WOLFF, G. Zur Frage der Linsenregeneration. Anat. Anz. xviii, pp. 136-139.
- WOODWARD, M. F. [See KORSCHOLT & HEIDER (396).]
755. YASUDA, ATSUSHI. Studien über die Anpassungsfähigkeit einiger Infusorien an concentrirte Lösungen. J. Coll. Japan xiii, pp. 101-140, 3 pls.
- YULE, G. U. [See BEETON, YULE, & PEARSON (54).]
756. YUNG, E. Modifications anatomiques consécutives à un jeûne prolongé. C.R. Soc. Helvet. in Arch. Phys. Nat. x, pp. 572-574.
757. ZEHNDER, L. Die Entstehung des Lebens aus mechanischen Grundlagen entwickelt. Zweiter Teil. Zellenstaaten. Pflanzen und Tiere. 8vo, Tübingen, pp. viii + 240, 66 figg.
758. ZIEGLER, H. E. Theoretisches zur Tierpsychologie und vergleichenden neurophysiologie. Biol. Centrbl. xx, pp. 1-16, 4 figg.
759. \* —. La base cytologique de l'instinct et de la mémoire. Trav. Inst. Solvay iii, 20 pp., 6 figg.  
Review Zool. Centrbl. vii, pp. 746-748.
760. ZITTEL, K. A. VON. Text-Book of Palæontology. Translated and edited by Charles R. Eastman. Vol. i. 8vo, London, pp. viii + 706, 1476 figg.
761. ZSCHOKKE, F. Faune des cours d'eau de montagne. C.R. Soc. Helvet. in Arch. Phys. Nat. x, pp. 557-560.
762. —. Die Tierwelt in den Hochgebirgsseen. Denk. Schweiz. Ges. xxxvii, 400 pp., 8 pls. and 4 maps.
763. ZYKOFF, W. Das Potamoplankton der Wolga bei Saratow. Zool. Anz. xxiii, pp. 625-627.

## II.—SUBJECT-INDEX.

## 1. TEXT-BOOKS and GENERAL.

Text-books:—Treatise on Zoology; LANKESTER and others (405 & 406).—Comparative anatomy of Invertebrata, second ed. of one part; LANG (404).—Introduction to comparative anatomy; BOURNE (90).—Text-book of Palæontology, vol. 1; ZITTEL (760).—5th ed. of Text-book of Zoology; R. HERTWIG (328).—Manual of zoology; PARKER & HASWELL (536).

Elements of Vertebrate embryology; HERTWIG (306).—Invertebrate embryology, translation; KORSCHOLT & HEIDER (396).

Elementary course of practical zoology; PARKER (537).—Manual of Zoology; PETELENTZ (549).—Agricultural Zoology; RITZEMA-BOS (84).

Handbook of microscopic technique etc.; BÖHM & OPPEL (72).—5th ed. of Microtome's Vade-mecum; BOLLES LEE (418).

Animal Life with emphasis on bionomics; FICKERT & KOHLMAYER (228).—Continuation of "Das Tierreich"; SCHULZE (644).—Continuation of BRONN's Thierreich (97).—Encyclopædia of Natural Science (211).—First part of "Das Thierleben der Erde"; HAACKE & KUHNERT (295).

Dictionary of Zoology completed; MATSCHIE (472).

Introduction to Zoology; DAVENPORT, C. B. & G. C. (167).—Outlines of comparative physiology and morphology of animals; LE CONTE (412).—Outlines of zoology; SCHMEIL (637).—Translation of Part I. of Text-book; SCHMEIL (638).—"The Animal World"—Part I.; SNIJDERS (662).—Course of Zoology; SOGRAFF (663).

2nd ed. of Text-book on the Cell &c.; WILSON, E. B. (745).—Lessons in experimental physiology; DUBOIS & COUVREUR (189).

Sixth edition of "Thierkunde"; PAUST (539).—General animal biology; COLLAMARINI (139).

An attempt at a chemical interpretation of vital phenomena; GIGLIOTOS (276).—"Form and life"—the mechanical method in zoology; HOUSSAY (347).—Biological sketches and lectures; NUSBAUM (523).—Biological foundations of zoology; SCHIMKEWITSCH (635).—Continuity of life as the foundation of the modern biological outlook; VIRCHOW (719).

Fourth part of "Kunst-Formen der Natur"; HAECKEL (297).—Album of engravings of animals; SPECHT (665).—Previously unpublished "Icones"; HEMPRICH & ERRENBURG (316).

Popular:—Under the Microscope; ACLOQUE (4).—The submarine world; ACLOQUE (5).—A walk through the Zoological Gardens; AFLALO (8).—Life among wild beasts at the "Zoo"; BARTLETT (39).—Memories of the months; MAXWELL (483).—Another new edition of Gilbert White's *Selborne*; WHITE (738).

2nd revised edition of "The Grammar of Science"; PEARSON (541).—The categories of "mechanism" in biology; ALBRECHT (11).—Vitality; BEALE (51).—Vitalism, historical and critical review; MYERS (515).—Mechanical theory of origin of life etc.; ZEHNDER (757).—The beginnings of life; BYRAM (110).—On the validity of biological generalisations; DRIESCH (184).—Criticism and polemics in biological argument; EMERY (210).—Cardinal principles of science; MCGEE (454).—Biological science and its utilities; REIGHARD (601).—On reform in zoological nomenclature; STEFANESCU (670).—Death among animals (zoopsychology and zoo-ethics); BALLION (26).—Aesthetic appreciation of mammals; MÖBIUS (496).—Factors usually neglected in biological investigations; HYATT (351A).

Historical:—Review of recent biological progress; TURNER (701 & 702).—Biology in the 19th century; HERTWIG (325).—Primitive nature-study; CHAMBERLAIN (124).—Historical aspects of the discovery of the circulation

of the blood; ALLBUTT (13).—Re-edition of Cuvier's "Eloges" on French savants, with an appreciation of Cuvier himself; CHAUVIN (129).—F. M. Pagano, a Neapolitan pioneer of evolution; FENIZIA (216).—History of the Paris "Société de Biologie"; GLEY (280).—Essays on the history of biology; GLEY (282).—Unpublished correspondence of Swainson; GÜNTHER (291).—Johannes Müller; HERTWIG, VON LA VALETTE ST GEORGE & WALDEYER (327).—History of staining methods; HOLLBORN & ANGUS (340).—Spallanzani; VON KÖLLIKER (389).—Different conceptions of living creatures during the 19th century; POTONIÉ (562).—Von Baer's position in regard to purposive adaptations; STÖLZLE (674).—Von Baer's position in regard to the descent of man; STÖLZLE (675).

Biographical:—Huxley's life and work; LORD AVEBURY (23).—Life of Huxley; L. HUXLEY (350).—Short life of Huxley; CHALMERS MITCHELL (494).—Note on Huxley's ancestry; ELLIS (209).

Henri and Alphonse Milne-Edwards; PERRIER (548).—Alphonse Milne-Edwards; BLANCHARD (69); LOEWY (437); MAREY (462).—Emile Blanchard; BOUVIER (91).—Carl von Kupffer's 70th birthday, his life and work; BASHFORD DEAN (170).

Life and letters of E. D. Cope; FRÄZER (241).—Eloge on J. B. Carnoy; GILSON (279).—Father of French zoology, Pierre Gilles, D'Albi; HAMY (304).—E. G. Balbiani; HENNEGUY (318).—Victor v. Mihalkovicz; LENHOSSÉK (419).—Henri Beauregard; PETTIT (553).—Gustav Born; ROUX (621).

## 2. DISTRIBUTION.

Fauna of the Deep-Sea; CHUN (133).—Zooplankton of Swiss Lakes; BURCKHARDT (107 & 108).

Faunistic:—Bionomics of the Katzenssee; AMBERG (14).—Variations in the Plankton of Lake Chauvet; BRUYANT (100).—The 'halophilous' fauna of Auvergne; BRUYANT & EUSEBIO (101).—Fauna of the salt 'limane' at Odessa; BUTSCHINSKY (109).—Physical conditions and geographical distribution of Atlantic Copepoda; CLEVE (135).—The impoverishment of the Sea; GARSTANG (257).

Third ed. of Eysen's Natural History of microscopic freshwater organisms; SCHÖNICHEN & KALBERLAH (642).—Fauna of the "Kieler Förde"; BÜRKEL (105).—New additions to the Baikal fauna; DYBOWSKI (192).—Bionomics of the Neuenburger-See; FUHRMANN (247).—Fauna 'de la fosse de la Hague' (Manche); GADEAU DE KERVILLE (249).—Pontus and the Mediterranean; KOBELT (387).—Kobelt's views in regard to the Mediterranean fauna; GIGLIOLI (275).—Distribution and origin of Japanese fauna; JACOBI (357).—Fauna in stagnant waters of the Skären islands; LEVANDER (421).—Fauna of Finnish lakes; LEVANDER (423).—Biology of the Caspian Sea; LÖNNBERG (434).—Animal life in water-basins of varying salinity; NORDENSKIÖLD (521).—Trawlings in the Skager Rack and Cattegat; PETERSEN & LEVINSÉN (551).—Fauna of Stuhmer See; SELIGO (852).—Marine biology at Beaufort; WILSON, H. V. (746).

Cave-Fauna of Moravia; ABSOLON (2).—North American cave-animals; EIGENMANN (200, 202).—Plankton of Echo River, Mammoth Cave; KOFOID (390).—Cave-fauna of Krim; LEBEDINSKI (409).

Plea for the study of limnobiology; WARD (730).—Problems of limnology; BIRGE (67).—Causes of the depopulation of certain rivers; RASPAIL (586).—Fauna of mountain streams; ZSCHOKKE (761).—Of mountain lakes; ZSCHOKKE (762).

Comparative study of methods of plankton measurement; WARD (731).—Methods of plankton-computation; AMBERG (14A).—Animal plankton from Jan-Mayen to the Norwegian coast; AURIVILLIUS (22).—Plankton

collections by means of the pump-method; BACHMANN (24).—Conditions favourable for plankton collecting on the high seas; BUCHET (103).—Plankton of the southern Atlantic and southern Indian Ocean; CLEVE (136).—Plankton of the Red Sea; CLEVE (137).—Causes of plankton accumulations; CURREY (152).—Potamoplankton of the Volga; ZYKOFF (763).—Plankton of Lunzer-See; VON KEISSLER (377).—Plankton of Mammoth Cave; KOFOID (390).—Plankton-work of Illinois Biological Station; KOFOID (391).—Autumn and winter plankton in Finnish waters etc.; LEVANDER (422).—A general introduction to the study of the plankton of freshwater lakes; MARSH (466).—Zoo-plankton of 'the old Danube' at Vienna; STEUER (672).—Two collections of tropical and more northerly plankton; THOMPSON (687).—Relation of freshwater plankton to the specific gravity of the water; WESENBERG-LUND (736).—Specific gravity of freshwater animals in relation to habits, development, and composition; WILLIAMS (742).

Faunistic regions:—The lower and middle Sonoran zones in Arizona and New Mexico; COCKERELL (138).—On the zoo-geographical relations of Africa; GILL (278).—History of the neo-tropical region; IHERING (352).—Geological and faunal relations of Europe and America during the tertiary period, and the theory of the successive invasions of an African fauna; OSBORN (527).—Genesis of mid-Pacific faunas; PILSBRY (555).—Fauna arctica; RÖMER & SCHAUDINN (609).—Animal life of equatorial East Africa; SCHILLINGS (632).—Distribution of Vertebrate animals in India, Ceylon, and Burma; BLANFORD (69A).—Vertebrate fauna of France, with analytical tables and diagnoses; ACLOQUE (3).

Travels and Explorations:—Cruise of the Albatross; AGASSIZ (9).—Monograph of Christmas Island; ANDREWS (17).—Marine Fauna of Christmas Island; ANDREWS and others (18).—Through Asia Minor into the Bulghar-Dagh; BODEMEYER (71).—A naturalist's travels in tropical South America; BÜRGER (104).—The German Deep-Sea Expedition; CHUN (133 & 134).—Zoological collecting in Jamaica; CONANT (140).—From the Antilles to the Far West; DOFLEIN (177).

Zoology of the Horn expedition; EATON (193).—Kilimandjaro; MEYER (491).—Second cruise of the "Princess Alice II"; PRINCE OF MONACO (499).—Scientific expeditions of the Prince of Monaco; RICHARD (606).—Belgian antarctic expedition; PRUVOT (568).—The German Deep-Sea Expedition; WINTER (751).—Towards the South Pole; RACOVITZA (582).—Sport and travel, East and West; SELOUS (653).—Natural History, journey to Northern British Columbia, Alaska, and the North-west Territory; STONE (676).

Cheap edition of Darwin's voyage of the "Beagle"; DARWIN (161).—Cheap edition of "Travels on the Amazon"; WALLACE (727).

Notes on the zoological garden of Berlin; BLAAUW (70).—Encrusting animals; COUPIN (143).

### 3. MORPHOLOGICAL.

#### a. *Taxonomy and Anatomy.*

The species and the race; SANSON (629).—Homology and individual peculiarity; RABL (580).

A phylogenetic study, — Monoblasta — Polyblastia — Polycellularia; SCHLATER (636).

Bearings of fossil Ichthyology on the problem of evolution; TRAQUAIR (697).—Origin of Vertebrates; GASKELL (259).—Hypotheses as to the origin of paired limbs of Vertebrates; GRAHAM KERR (378).—"Somatic relations in the Zoological scale"; ALESSI (12).—Homology and Analogy;

LE DANTEC (415).—The problem of metamerism, and a suggested origin of segmented worms; BERNARD (59).—Tendencies in modern morphology; GARBOWSKI (254).—The theory of the germinal layers; GARBOWSKI (254).—Secondary body-cavity, its supposed excretory significance; MEYER (490).—Primary segments of the Vertebrate head; HILL (334).—Morphology of the roof and lateral recesses of the fourth ventricle; BLAKE (68).—Comparative morphology of Vertebrate brains; HALLER (300).—Comparative anatomy of the arteries of the brain and spinal cord in Vertebrates; HOFMANN (339).—Parietal organs and parapophyses; ROHON (613), STUDNÍČKA (680).—Comparative study of the cervical sympathetic system in the Vertebrate series; JAQUET (359).

Phylogenetic laws of antler-evolution; RÖRIG (610).—Comparative study of the ontogeny and phylogeny of the supra-renals; AICHEL (10).—The old mouth and the new; FÜRBRINGER (244).—Comparative anatomy of the pectoral apparatus and shoulder muscles; FÜRBRINGER (245).—The ossicula auditus; KINGSLEY (383).—Phylogeny of hair; BRANDT (93).

### b. *Histology.*

Vol. III. of Text-book of the comparative histology of Vertebrates; OPPEL (525).—Atlas of histology; RABAUD & MONTPELLARD (577).—On the structure of the nerve-cells in various animals; HOLMGREN (341, 344).—Vascular apparatus of ganglion-cells; ADAMKIEWITZ (6).—Note on "Intracellular canaliculi" of spinal ganglion cells; BETHE (63); sap-canalculi of nerve-cells; HOLMGREN (343).—The neurofibrils in ganglion cells and their relation to Golgi's nets; BETHE (65).—Structure of the nerve cells of the cerebral cortex; GOLGI (286).—Structure of medullary nerve-fibres; GOLGI (287).—Fine structure of optic nerves; GREEF (289).—Structure and micro-chemistry of nerve-cells; SCOTT (650).—Minute anatomy of the sympathetic ganglia in different classes of Vertebrates; HUBER (348).—Morphology of the neuron; VERWORN (708).—Evolutionary transformations of the nerve-cell; DELL' ISOLA (356).—Structure of medullated nerve-fibres; SALA (626).—Reissner's fibre in the canalis centralis of Vertebrates; SARGENT (630).—Minute structure of ganglion-cells; STUDNÍČKA (678).—The ependym of the nervous central organs; STUDNÍČKA (679).

Histology of the blood, normal and pathological; EHRLICH & LAZARUS (199).—On the granules of the red blood corpuscles; GIGLIO-TOS (277).—Microcrystallographic studies on Vertebrate blood; KOBERT (388).—Persistence of a nucleus in adult mammalian red blood corpuscles; MARCHESINI (461).—On the causes of the shape of non-nucleated blood corpuscles; MYERS (516).—Erythrocytes and blood-plates; SACERDOTTI (626).—A study in histogenesis, leucithoblast and angioblast; HIS (337).—Summary as to histology and histogenesis of muscular tissue; HESSE (331).—Nuclear-multiplication in cross-striped muscle; GODLEWSKI (283).—Muscle-spindles; BAUM (49).—Difference of muscles in cold- and warm-blooded animals; ROLLETT (615).—Comparative studies on the structure of the retina; BERNARD (58).—Microscopic structure of the retina; GREEF (289).—The neuron theory in the light of recent discoveries; PARKER (534).—Criticism of the "Neuron Theory"; HILL (333).—General discussion of the neuron; VERWORN (708).

Structure of neuroglia; JOSEPH (371).—Degeneration, senility and death of nerve-cells; MARINESCO (465).—Structure of nerve-cells in starved animals; MARTINOTTI & TIRELLI (470).—Summary of modern conclusions as to the fine structure of the nervous system; MOLLIER (498).—Comparative histology of the lens; RABL (579).

Muscle spindles, nuclei and position of motor nerve-endings; SIEHLER (658).—Connective tissue of smooth muscle and the so-called intercellular



bridges; HENNEBERG (317).—Cementing substance, matrix, epithelium, and endothelium; WALDEYER (726).—Endochondral ossification; KAZZANDER (374).

Physiology of digestion; LECONTE (410).—Rôle of the ergastoplasm in secretion; GARNIER (255).—Mitochondria and secretory granulations; BENDA (55).—Fine structure of gland-cells; GOLGI (288).—Histology of carotid gland; KOHN (392).—On the fine structure of stratified epithelium; FOÀ (235).—Changes of structure in the pancreas cells; MATHEWS (475).—Secretion in the granulose glands of the Salamander; PHISALIX (554).

Bütschli's work on the structure of coagulable substances; SCHUBERG (643).

#### 4. PHYSIOLOGICAL

##### a. *General.*

Lessons in experimental physiology; DUBOIS & COUVREUR (189).—Revised ed. of *Lessons in Elementary Physiology*; HUXLEY (351).—The last sign of life; WALLER (729).—Theory of living matter, assimilation, reproduction &c.; GIGLIO-TOS (276).—Nature and origin of protoplasm; TURNER (700).—Chapter on "Life" in revised ed. of "Grammar of Science"; PEARSON (541).

##### b. *Particular Functions.*

Hæmatic copper and the respiratory capacity of hæmocyanin; DHÉREL (173).—On the normal presence of copper in the animal series; DUBOIS (186).—Localisation, elimination, and origin of arsenic in animals; GAUTIER (264).—Rôle of arsenic in the animal economy; GAUTIER (265).—Physiology and growth-mechanism of the vascular system; FUCHS (243).—On a hitherto unrecognised form of blood-circulation without capillaries in Vertebrata; MINOT (493).—Auto-oxidation; MANCHOT (459).

True function of the thymus; BEARD (53).—Physiology of secretion; MATHEWS (475A).—Import of the islands of Langerhans in the pancreas; SCHULZE (648).—The carotid gland and its relation to the suprarenal capsule; SWALE VINCENT (718).—Remarks on internal secretion and the phylogeny of the suprarenal capsule; SWALE VINCENT (718).—Supposed excretory significance of the secondary body-cavity; MEYER (490).—Osmotic communication between the interior of the marine invertebrate and the milieu; QUINTON (572).—Permeability of the body-wall to water and salts; QUINTON (573).

On the formation of peptone from albumen; BOKORNY (74).—Formation and growth of the Molluscan shell; STEMPELL (671).—Observations on digestion and the formation of carbohydrates in *Pelomyca palustris*; ŠTOLC (673).

Influence of electric currents on simple organisms; CARLGREN (118).—Influence of electric currents on developing tadpoles; CAFRIATI (117).—Reactions of certain Infusorians to the electric current; PEARL (540).—Reactions of unicellular organisms to various stimuli; JENNINGS (360-363).—Reaction of *Amœba* to lights of different colour; HARRINGTON & LEAMING (309).—Study of the movements of Protozoa etc.; JENNINGS (364 & 365).

Comparative physiology of compensatory movements; LYON (452).—Correlation between growth and food-supply in starfish; MEAD (485).—Uselessness of lecithin as a stimulus to growth; WILDBERS (741).—Theory of immunity; EHRLICH (198).—Mechanism of biophotogenesis; DUBOIS (187).—Influence of sterilised air on animals; KJANIZIN (381).—Influence

of surrounding temperature during hibernation; DUBOIS (188).—Latent life as an adaptation to cold or drought; LALOY (403).—The rôle of ion-proteid compounds in vital phenomena; LOEB (427).—The poisonous character of a pure NaCl solution; LOEB (427).—On the different effect of ions upon myogenic and neurogenic rhythmical contractions and upon embryonic and muscular tissue; LOEB (428).—Import of salts in the life of organisms; RYWOSCH (624).—Chemistry of the animal organism; DE VARIGNY (704).

Seasonal changes in the fatty content of fat-bearing organs; FUNKE (248).—Renal function of genital organs of Holothuroids; RUSSO (623).—Right- and left-handedness; LUEDDEKENS (451).—Clamp and other mechanisms in animals; THILO (685).

### c. *Pigmentation and Colour.*

Study of colour-change in *Hippolyte varians*; GAMBLE & KEEBLE (253), KEEBLE & GAMBLE (375).—Changes of colour in *Schistocerca*; KÜNCKEL D'HERCULAIS (399).—Spongiorporphyrin, MACMUNN (457).—Influence of different rays on colouration; NENÜKOW (517).

Problem of animal pigments; PROWAZEK (567).—Animal chlorophyll; DANILEWSKY (160).—Development of the pigment and colour pattern in Coleoptera; TOWER (695).—Markings and colouration of birds; TRIPS (698).—Development of colour in moths and butterflies; MATYER (484A). See also INSECTA.

### d. *Nervous and Sensory: Comparative Psychology.*

Senses:—Heliotropism in *Cypridopsis*; TOWLE (696).—Sense of colour and of intensity of illumination; ABELS-DORFF (1).—Reactions of Planarians, with and without eyes, to light; PARKER & BURNETT (535).—Sense of orientation; BONNIER (77), CYON (155).—Space-relations; BONNIER (78).—The peripheral organs of the sense of space; CYON (157 & 158).—Sense of direction in Bats; ROLLINAT & TROUESSART (616).—Why are the semicircular canals disposed as they are? DELAGE (171).—On the functions of the ear-labyrinth; DREYFUS (181).—Auditory vesicles as equilibrating organs in Pterotracheidae; ILYIN (353).—Organs of light perception in the lower animals (Molluscs); HESSE (332).

Physiology of the neuron; VERWORN (708).—Digest and criticism of the data for the theory of the amoeboid movements of the neurons; BAWDEN (50).—Automatism of nerve-cells; POMPILIAN (561).—Theories of the nervous system; PRENANT (564).—Contributions to the physiology of the central nervous system; BICKEL (66).—Criticism of the neuron theory; HILL (333).—Degeneration, senility, and death of nerve cells; MARINESCO (463-465).—Irritability in the animal series; COURTADE (145).—The nervous system and animal chemistry; MORAT (503).—Innervation of muscle; SIHLER (657).—In regard to the hypophysis; CYON (156).

The relation of stimulus to sensation; LLOYD MORGAN (505).—Death among animals—zoo-psychology and zoo-ethic; BALLION (26).—The sentiment of death among animals; COUPIN (144).—Study of animal psychology; HACHET-SOUPLET (296).—Behaviour of unicellular organisms; JENNINGS (365).—Experimentation on emotion; SHERRINGTON (656).—Comparative physiology in relation to comparative psychology; UEXKÜLL (703).

Localisation of psychical processes in the brain; ROLLETT (614).—Psychical qualities of ants; BETHE (64).—The memory of fishes; EDINGER (196).—Do the reactions of the lower animals against injury indicate pain sensations? NORMAN (522), LOEB (522).—Physiological psychology; VIGNOLI (711).—Comparative psychology and sensory physiology; WASMANN

(733).—Animal psychology and comparative neuro-physiology; ZIEGLER (758).

Instinct and Intelligence:—Instinct; THORNDIKE (688A).—Associative processes in animals; THORNDIKE (688B).—Instinct or reason?; G. W. & E. G. PECKHAM (545).—Comparative studies on ants and higher animals; WASMANN (734).—The animal and the human mind; SCHOENICKEN (641).—Materials for comparative psychology; study of the instincts of *Argyroseta aquatica*; W. WAGNER (724).—The animal mind as a factor in evolution; PURNELL (571).—The cytological basis of instinct and memory; ZIEGLER (759).

## 5. PROTOPLASM AND THE CELL.

### a. *Protoplasm.*

Theory of living matter; GIGLIO-TOS (276).—The proteids of living matter; LOEW (436).—Nature and origin of living matter; TURNER (700).—Illustrations of the Granula-theory; ARNOLD (20 & 21).—On protoplasm in general; E. B. WILSON (745).—The state of 'aggregation' in protoplasm; JENSEN (366 & 367), SCHENCK (631).

### b. *Cell, Structure and Function.*

Revised edition of "The Cell in development and in inheritance"; WILSON, E. B. (745).—Structure of the cell; HEIDENHAIN (314).—Organization of the cell; BALLOWITZ (29).—Cell-studies; NIESSING (519), PROWAZEK (565).—Role of the ergastoplasm; GARNIER (255).—Structure of the living cell; SJÖRING (660).—"Specificité" and transformation of cells; RETTERER (605).—Evolution of the animal cell; SMITH (661).

Note on the alleged internal reticular apparatus of ganglion and glandular cells; BALLOWITZ (28).—The canaliculi of cytoplasm and the perinuclear space; DONAGGIO (179).—Intracellular canaliculi in ganglion-cells; STUDNÍČKA (678).—Fine structure of epithelial cells; FOŁ (235).—Structure of ciliated cells and hair-cells; FÜRST (246).

Cellular Physiology:—Physiology of ciliary movement; BERGEL (56), KUILE (401).—Ciliated cells and hair-cells; FÜRST (246).—Development of ciliated cells; GURWITSCH (292).—Study of ciliated cells and their analogues; PRENANT (563), STUDNÍČKA (677), VIGNON (714).—Significance of the basilar granules of cilia; VIGNON (712).—Cilia and cuticle; VIGNON (713).—Theory of amœboid movement; BERNSTEIN (60).—The plastic activity of animal cells; RANVIER (585).—The law of cellular association; BONMARIAGE & PETRUCCI (75).—Cellular struggle; COTRONEI (142).—Physiological degeneration in the Protozoa; R. HERTWIG (330).—Senescence in Infusorians; KULAGIN (400).—Some aspects of cell metabolism illustrated with reference to the pancreas cell; MATHEWS (475).—Absorption of aniline stains by the living cell; OVERTON (529).

### c. *Nucleus, Nucleolus, Centrosome, etc.*

The position and function of the nucleus; GERASSIMOFF (268).—Giant nuclei; BALLOWITZ (27).—Binuclear hepatic cells; ARAPOW (19).—Nuclear metamorphoses during growth and in old age; BALLOWITZ (30).—Formation of the nucleus; VEVEY (709). Nuclear erosion etc. under the influence of the cell-sphere; BALLOWITZ (31).—On the alleged amœboid movements of the germinal vesicle; GIARDINA (274).—Inanition of the nucleus; LOUKIANOV (449).—Persistence of a nucleus in adult Mammalian red blood corpuscles; MARCHESINI (461).

Nuclei and cell-spheres of the membrana elastica posterior of the eye.—a contribution to our knowledge of cell-organisation; BALLOWITZ (39).—Secretory rôle of the nucleus; PHISALIX 554.—Rôle of the nucleus in absorption; STASSANO (668).—Function of the nucleus in the formation of hæmoglobin and in cellular protection; STASSANO 669.

Morphology and physiology of nuclear division; DOPLEIN (176).—Nuclear multiplication in cross-striped muscle; GODLEWSKI (363).—Nuclear divisions in *Noctiluca*; ISHIKAWA 355.—Nuclear division in Protozoa; CALKINS (111A).—Rôle of the nucleolus in secretion; VIGIER (710).—On nucleoli; REDDINGIUS (588).

Centrosomes, etc.—Nature of the so-called kinetic centres of cells; EISMOND (208).—Idiozom and central corpuscle in ovarian ovum of Mammals; GURWITSCH (293).—Discussion of centrosomes etc.; HEIDENHAIN (314).—Occurrence of central corpuscles in nerve-cells of *Cottus scorpio*; KOLSTER (393).—Central corpuscles in germ-cells and sarcomatous cells; LONDON (448).—Centrosomes in relation to ciliated cells; STUDNIČKA (677).—Centrosomes and ganglion-cells; STUDNIČKA (678).

The accessory chromosome in the spider; WALLACE 728.—The intermediate corpuscle and the number of chromosomes in the rabbit; WINIWARTER (748).

#### d. Cell-Division.

On cell-division, report; FLEMMING (234).—Plasma-streamings in cell-division; BÜTSCHLI (106).—Anomalous karyokineses; CHATIN (128).—Contributions to the morphology and physiology of cell-division, based on studies of *Noctiluca*; DOPLEIN (176).—Interpretation of karyokinetic figures; GALLARDO (250 & 251).—Mitoses succeeding processes resembling amitoses; HAECKER (298).—On so-called amitoses; HIS (338).—Study of indirect cell-division in lymphatic cells; JOLLY (369 & 370).

Multiplication of cells by division; POLJAKOFF (558).—On mitotic pressure; investigations on the cells of the capillaries in Salamander larvae; REINKE (602). Plasmic currents in mitosis, a contribution to the mechanics of cell-division; REINKE (603).

### 6. OOGENESIS, SPERMATOGENESIS. MATURATION, FERTILISATION.

#### a. Ovum.

History of the germ-cells; BEARD (52), LWOFF (453).—Embryological classification of ova; ETERNOD (214).—Histogenesis of the frog's ovary; BOUIN, M. (85).—The genital primordium in the frog; BOUIN, M. (86).—Expulsion of primordial ova in tadpoles; BOUIN, P. (87).—The Graafian follicle in Mammals; BOUIN, P. & M. (88).—Stages in the development of the corpora lutea; BÜHLER (102), HONORÉ (345).—Nature of the corpus luteum; PALADINO (530 & 531).—Relation of the zona pellucida to the ovum; VON EBNER (194).—Photographs of the egg of *Allolobophora fatida*; FOOT & STROBELL (239).—The vitality of ova; GEMMILL (266).—Oogenesis in the rabbit; WINIWARTER (749).—Polyovular follicles; BOUIN, P. & M. (88), HONORÉ (346), SCHUMACHER & SCHWARZ (649).—Ova with several nuclei; SCHUMACHER & SCHWARZ (649).

On the alleged amœboid movements of the germinal vesicle; GIARDINA (274).—Idiozom and central corpuscle in the ovarian ovum of Mammals; GURWITSCH (293).—Ovarian follicle of Reptiles; LOYEZ (450).—Atrophy of ova in mammalian ovary; MATCHINSKY (471).—Healing of ovarian wounds and regeneration of ovarian tissue; MAXIMOW (482).—The defence of the egg; LOISEL (439).

Oogenesis in *Cerebratulus*; C. B. WILSON (744).—The problem of the sex-cells in Hydromedusae; HARGITT (307).—The ovum of *Schischostemma*; CHILD (130).—Oocytes of the cat; HOLMGREN (342).—Studies on the mammalian ovary; HONORÉ (345 & 346).—Differentiation of cellular elements in the ovary of the queen-bee (*Apis mellifica*); PAULCKE (538).—Oogenesis in *Rhizotrogus solstitialis*; RABES (578).—Oogenesis etc. in larval *Antedon*; RUSSO (622).—Abnormal ovum of *Tropidonotus natrix*; WETZEL (737).

#### b. *Spermatozoon*.

Histogenesis of spermatozoa in *Triton cristatus*; BERTACCHINI (62).—Giant spermatids in *Bombinator igneus*; BROMAN (94 & 96).—Structure and development of spermatozoa in the same; BROMAN (95).—In *Amphiuma*; MCGREGOR (455).—Spermatogenesis of *Hydra*; DOWNING (180).—Division of spermatocytes in Mammals; VON EBNER (195).—Spermatogenesis in *Batrachoseps*; EISEN (206 & 207).—Spermatogenesis of *Peripatus balfouri* up to the formation of the spermatid; MONTGOMERY (500).—In man; WILCOX (740).—In *Cerebratulus lacteus*; C. B. WILSON (744).

Polymorphous spermatogonia, auxocytes, and spermatocytes; EISEN (206).—Spermatogenesis in hybrid pigeons; GUYER (294).—Kinesis in new testes and in the development of pollen, compared; JANSSENS (358).—Spermatogenesis in sparrow; LOISEL (438).—Male ovules and Sertoli's cells; LOISEL (441).—Direct division in spermatogenesis; LOISEL (443).—Physiology of the testes in birds; LOISEL (444).—Spermatids with multiple nuclei in Mammals; MAXIMOW (480).—Teratological forms of sperm-cells; MAXIMOW (481).—Spermatogenesis in the bull; SCHOENFELD (640).

The "Nebenkern" (mitochondrial body) of sperm cells; MEVES (489).—Note on spermatogenesis; NIESING (520).—Staining spermatozoa; PARFENHEIM (532).—Amitotic division of Sertoli's cells: fate of the nucleolus, etc.; REGAUD (589).

Normal Degeneration of seminal cells in Mammals; REGAUD (590).—Nuclei of rat's spermatocytes; REGAUD (593).—Abnormalities in mammalian spermatogenesis; REGAUD (591, 598 & 599).—Phases of spermatogenesis; REGAUD (595 & 595A).—Alleged direct division of spermatids in Mammals; REGAUD (592).—Seminal secretions; REGAUD (594, 596 & 597).

Alterations in the seminiferous tube of the white rat in the course of induced alcoholism; BOUIN & GARNIER (89).—The vitality of spermatozoa; GEMMILL (266).—Studies on spermotoxin; METALNIKOFF (487), METSCHNIKOFF (488).

#### c. *Maturation*.

The ideas of Driesch regarding polar globules; GIARD (269).—Maturation and fertilisation; POLJAKOFF (559).—In *Limax agrestis*; BYRNES (111).—In *Petromyzon fluviatilis*; HERFORT (320).—In *Moina rectirostris*; LEPECHKINE (420).—In pulmonate Gasteropods; LINVILLE (426).—In *Thysanozoon brocchi*; SCHOCKHAERT (639).—In *Cerebratulus lacteus*; C. B. WILSON (744).

Mitoses of premature maturation in Mammals; BOUIN, P. & M. (88).

#### d. *Fertilisation*.

General account of fertilisation; LWOFF (453).—Nature of the process of fertilisation; LOEB (433A).—In *Limax agrestis*; BYRNES (111).—In Batrachians; CARNOY & LEBRUN (120).—In *Tubifex rivulorum*; GATHY

(260).—In *Clepsine complanata*; GATHY (260).—In *Petromyzon fluviatilis*; HERFORT (320).—In Pulmonate gastropods; LINVILLE (426).—In *Cerebratulus lacteus*; C. B. WILSON (744).

Fertilisation and maturation; POLJAKOFF (559).—Experimental studies on fertilisation in leeches; BRUMPT (98 & 99), KOWALEVSKY (398).—Ineffectiveness (as to fertilisation) of the fluid expressed from trout-sperms; CREMER (146).—Experiments with sea-urchin ova; PROWAZEK (566).—Segmentation of unfertilised ova treated with extract of sperm; WINKLER (750).—Cross-fertilisation in Echinoids; VERNON (706).

'Artificial parthenogenesis,' in *Arbacia*; LOEB (429-431).—In *Chaetopterus*; LOEB (432).—Is there any relation between the chemical composition of the germ-cells and that of solutions which induce parthenogenesis? DELAGE, Y. & M. (172).—Theory of 'excitable' nuclei and stimulating environment; LE DANTEC (414).—Artificially produced mitotic division in unfertilised ova of *Arbacia*; MATTHEWS (473 & 474).—So-called chemical fertilisation is really parthenogenesis; VIGUIER (715-717).—Further studies on the action of salt-solutions and of other agents on the eggs of *Arbacia*; MORGAN (509 & 511).

## 7. EMBRYOLOGICAL.

### a. General.

Outlines of Vertebrate Embryology; O. HERTWIG (306).—Introduction to Vertebrate Embryology; LWOFF (453).—Trans. of vol. 4 of Embryology of Invertebrates; KORSCHULT & HEIDER (396).—Modern problems of development; WILSON, E. B. (745A).

Embryological methods; KAESTNER (372).—Criticism of the style of modern embryological research; GOETTE (285).—Embryological instruction at home and abroad; LOISEL (440).—Norm-tables of Vertebrate development (the chick); KEIBEL (376).—Discussion of the theory of the germinal layers; GARBOWSKI (254).—Homology and phylogenetic import of Kupffer's vesicle; KOPSCH (394).—Kupffer's vesicle in relation to gastrulation and concrescence; SUMPNER (681).—Relations of pathology to embryology, especially as regards the germinal layers; MARCHAND (460).

The connection between adjacent blastomeres; HAMMAR (303).—Relation of embryonic axes to first cleavage-planes; KOPSCH (395).—Contribution to the theory of embryonic growth; PETER (550).—First appearance of bilateral symmetry; ROUX (619), SCHULTZE (645).

On the regulation of development; DRIESCH (183).—The problem of "Determination"; VON HEIDER (315).—Significance of the spiral type of cleavage; CHILD (130A).

The problem of metamorphosis; BATAILLON (44), GIARD (271).—"Determinism of metamorphosis"; MESNIL (486).—Metamorphosis and phagocytosis; TERRE (682).—A study in histogenesis, lecitoblast and angioblast; HIS (337).—Similarity of histogenetic processes in embryo and adult; RETTERER (604).

Relation of the action of gravity to normal development; ROUX (618, 620), SCHULTZE (646 & 647).—The reaction of developing organisms to environment; VERNON (707).—Multiplication of segmentation-spheres in the ovum of *Salpa*; TODARO (690).

### b. Development of Particular Organs and Parts.

Developmental history of the primary segments of the Vertebrate head; HILL (334).—Development of the roof and lateral recesses of the fourth



ventricle; BLAKE (68).—Two epiphyses in a four-day chick; HILL (335).—Development of the lens; RABL (579).

Development of nerve cells; SCOTT (650).—Origin of nerves from cellular chains; RAFFAELE (583).—Growth of the olfactory groove in the lizard, with general considerations; PETER (550).

The source of the leucocytes and the true function of the thymus; BEARD (53).—Development of the so-called carotid gland; KOHN (392).—Development of the hypophysis; ORRU (526).

Development of the spleen in Amniota; TONKOFF (692).—Development of spleen, liver, gall-bladder, portal system, salivary glands in the various classes of Vertebrates; CHORONSHITZKY (132).—Histogenesis of antlers and the conditions of their development; RÖRIG (611).

Degenerative processes in abortive embryos; ENGEL (212).—Arrest of development in the area opaca in the fowl's egg; FÉRÉ (218).—Variations in the orientation of the chick embryo, their causes; FÉRÉ (219).

On the production of carbonic acid by fowl-embryos; BOHR & HASSELBALCH (73).—Influence of oxygen on development, and on the gaseous changes in the early stages of the frog's development; GODLEWSKI (284).—Mechanical and chemical changes during incubation; IRVINE (354).—Influence of changed respiratory conditions on the early development of the chick-embryo; MITROPHANOW (495).—On a peptic zymase in young embryos; HARTOG (310).

Influence of electric currents on development of tadpoles; CAPRIATI (117). On developmental stages of Invertebrates; CARLGREN (119).—Anomalies of the central nervous system induced experimentally in embryos of the chick; CUTORE (154).

Influence of low temperature on chick development; TIRELLI (689).—Lower temperature limits for the incubation of the eggs of the fowl; EDWARDS (197).—Influence of different rays on development; NENÜKOW (517).

### c. *Experimental Embryology.*

Artificial incubation and teratogeny; FÉRÉ (223).—Influence of injections of cafein into albumen of fowl's egg; FÉRÉ (224).—Effect of removing the shell (fowl's egg); FÉRÉ (225).—Influence of injections of cantharidin (chick embryo); FÉRÉ (226).—Influence of warmth on development of chick embryo; FÉRÉ (227).—Incubation without shell; LOISEL (445).—Resistance of eggs of birds to excessive dampness; LOISEL (446).—Development of fowl's ovum in albumen of duck; LOISEL (447).

Critical summary of recent researches on the behaviour of isolated blastomeres; BERGH (57).—Development of isolated blastomeres of Echinoid ova; DRIESCH (182).—Fusion of Echinoid embryos; DRIESCH (183).—Separation of blastomeres etc. in a medium free from lime; HERBST (319).—Experiments on Cephalopod ova; SCHIMKEWITSCH (633 & 634).

Artificial parthenogenetic segmentation in Amphibians and Fishes; BATAILLON (43).—On spermase and ovulase; DUBOIS (185).—On the artificial parthenogenesis of Echinoderm-ova; GIARD (272 & 273).—On spontaneous and on provoked (inflammatory) changes in Amphibian ova; LEVI (424). See *Fertilisation*.

Experimental production of double-monsters in *Triton*; TONKOFF (691).—Experimental production of two-headed embryos; SPEMANN (666).—Duplicity in development of Sauropsida; GRUNDMANN (290).—Spontaneous 'blastotomy' and twin larvae in the lamprey; BATAILLON (40).—Further experimental researches on the development of the lamprey; BATAILLON (41).—Osmotic pressure of the ovum and experimental poly-embryony; BATAILLON (42).—Experiments on osmotic pressure in relation to eggs; BATAILLON (45 & 46).

## 8. REPRODUCTION (incl. REGENERATION), SEX, and HEREDITY.

### a. *Reproduction and Sex.*

Some phenomena connected with reproduction and sex [see Zool. Rec. 1899]; SEDGWICK (651).—Multiplication and reproduction in the animal kingdom; TURDY (699).

Note on the effect of fertility depending on homogamy; PEARSON (544).—General problem of sexual reproduction; DANGEARD (159).—Modes of reproduction in Nematodes; MAUPAS (476).—Details as to reproductive processes in Radiolaria; BORGERT (83).—General questions involved in the life-cycle of *Chermes*-species; CHOLODKOVSKY (131).—Reproduction and life-history of *Cancer pagurus*; WILLIAMSON (743).—Neotænia in *Triton vulgaris*; BANCHI (32).—Evolution of hermaphroditism in Nematodes; MAUPAS (476).

Pigmentation in hybrids of bony fishes; BATAILLON (47).—Spermatogenesis in hybrid pigeons; GUYER (294).

Influence of extract of ovary on the modifications of nutrition which occur during pregnancy; CHARRIN & GUILLEMONAT (125 & 126).—Causes of imperfect development in the offspring of diseased mothers; CHARRIN, GUILLEMONAT & LEVADITI (127).—Influence of the nutritive medium on the development of Nematodes; CONTE (141).

Experiments on removing and on grafting Bidder's organ in the toad; POLICARD (560).

The sexual season in Mammals; HEAPE (312).—Parthenogenesis in Nematodes; MAUPAS (476).—Is there parthenogenesis in Vertebrata?; BONNET (76).—Is there parthenogenesis and polymorphism in Gamasids?; FOÀ (238).—On the parthenogenesis of bees; WEISMANN (735).

Consideration of the distinction between sexual and asexual reproduction; R. HERTWIG (329).—R. Hertwig's views on the distinction between sexual and asexual reproduction; CURTIS (153).—Influence of temperature on the reproduction of *Polycelis cornuta*; VOIGT (720).

The grafting of ovaries; FOÀ (236 & 237).—Transplantation of ovaries; HERLITZKA (321-324).—Utilisation of superfluous spermatozoa in female insects; HANDLIRSCH (305).—Problem of twins; SERVÉ (654).—Precocity and sexual periodicity in males; LOISEL (442).—Pro-œstrum and menstruation; HEAPE (312).—Menstruation and rut; GAUTIER (265).—Entropy of the genital system; HIRTH (336).—Rôle of the accessory genital glands in reproduction; GLEY (281).

Parental care in lower Vertebrates; WIEDERSHEIM (739).—Paederasty and tribadism in animals; KARSCH (373).—Problems of reproduction in bees; WEISMANN (735), KOSHEWNIKOW (397).—Differentiation of cell-elements in ovary of queen-bee; PAULCKE (538).—Life-history of unicellular organisms; KUNSTLER (402).—Significance of various phases in the life-history of Hæmaphysidæ; LANKESTER (407).—Unusual modes of breeding and development among Anura; SAMPSON (628).—Autogamy in Pulmonates; SIMROTH (659).—Cross-fertilisation in Echinoids; VERNON (706).—A law of hybridism; DE VRIES (721).

The sexes in pigeons; CUÉNOT (147 & 148).—Determination of sex; CUÉNOT (149).—Negative evidence regarding the influence of nutrition in the determination of sex; GEMMILL (267).—Determination of sex in Nematodes; MAUPAS (476).—Sex of chick embryos in relation to the form of the egg; PETIT (552).—Sex in extra-uterine embryos; RAUBER (587).—Non-functional males in Nematodes; MAUPAS (476).—Sexual dimorphism in the animal kingdom; a theory of the evolution of secondary sexual characters; CUNNINGHAM (150).—Note on secondary sexual characters; CUNNINGHAM (151).—Secondary sexual characters and the colouration of



the prong-back; POOCK '557.—Development of antlers: RÖRIG (611).—Correlation of the health of the gonads and the development of antlers; RÖRIG (611).—On sexual differences in muscle; GATLE 363.—Sexual dimorphism in a bivalve *Astarte sulcata*; OSTROCKOFF 538.

Physiological theory as to origin of secondary sexual characters in Salmonids; BARRETT HAMILTON (36 & 37).

Mating instinct in moths; MATER (454).—"Doppelmännchen" in Diplopoda; VERHOEFF 705.

Regenerative processes:—Regeneration: old and new interpretations; MORGAN (511A).—Some laws of regeneration; TORNIER (694).—Double tail in Amphibians; TORNIER (694).—Regeneration and Degeneration; BARFURTH (34).—Regeneration and transformation of organs; LOEB (433).—Heteroplasmy; BARMER (33).—Transplantation of complex parts; SALYKOW (627).—Experiments on regeneration; PRIEBRAH (569).—Homocosis, antennule replaced by a mandible in *Asellus*; BATESON (48).—Regeneration of the crystalline lens in Urodela; BRACHET & BESNOT (92).—Regeneration of the lens; FISCHER (229 & 230, KNAPP (386), RANDOLPH (584), WOLFF (754).—Heteromorphosis in *Planaria alpina* etc; MONTI (501 & 502).—Absence of regeneration in posterior limbs of the Orthoptera saltatoria; BORDAGE (79).—Regeneration of the tarsus and of the two anterior pairs of limbs in the Orthoptera saltatoria; BORDAGE (80).—Spiral growth of regenerating limbs in Arthropoda; BORDAGE (81).—Special protection of appendages in process of regeneration; BORDAGE (82).—Regeneration in *Ophiura*; DAWYDOW (169).—In *Asterias vulgaris*; KING (382).—Regeneration and regulation in Planarians; LILLIE (425).

Regenerative processes:—In *Bipalium*; MORGAN (506).—In Planarians; MORGAN (507).—In Teleosts; MORGAN (508).—In hermit-crab; MORGAN (510).—In trout embryos after injury; NUSBAUM & SIDORAK (524).—Experiments in regeneration and grafting of Hydrosoma; PECKLES (546).—In merotomy of *Diffugia*; PESARD (547).—Reparatory processes in *Lambriculus variegatus*; WAGNER (723).—Autotomy and regeneration in *Cerebratulus lacteus*; C. B. WILSON (744).—Regeneration of the thyroid gland; MOTTA-COCO (513).—Further experiments on the regeneration of tissue composed of parts of two species; MORGAN (512).—Regeneration of ovarian tissue; MAXIMOW (482).—Regeneration of the ovary; PUGHAT (570).—Regeneration and cicatrization in relation to embryonic development; RABAUD (575).

## b. Heredity.

Heredity:—A key to biological problems; LE DANTEC (416).—"Characters" and heredity; LE DANTEC (413).—Heredity and human progress; MCKIM (456).—Chapter discussing heredity in revised edition of "Grammar of Science"; PEARSON (541).—On the law of reversion; PEARSON (543).—Facts of inheritance; THOMSON (688).—The theory of pure race-types; AMMON (15).—On degeneration; MÖBIUS (497).—On the continuity of life as the foundation of the modern biological outlook; VIRCHOW (719).—Development of pigmentation in hybrids of bony fishes; BATAILLON (47).—Physical basis of inheritance; E. B. WILSON (745A).—Morphological continuity of the germ-cells in *Raja batia*; BEARD (52).

Observations in regard to telegony; BARTHELET (38).—Remarks on the above; BOGEZ (612).

On the inheritance of cell-characters; DOFLEIN (178).—Inheritance of longevity; FÉRE (222).—Hereditary debility, etc; HIRTH (336).—Repetition and non-confirmation of Brown-Séquard's experiments on the transmission of artificially acquired epilepsy; SOMMER (664).—Inheritance of the fat tail in *Ovis platyura*; THILENIUS (684).

On heredity in disease; HAMILTON (302).—Alterations in the seminiferous tube (of the white rat) in the course of induced alcoholism; BOVIN & GARNIER (89).—Imperfect development of offspring in the case of diseased mothers; CHARRIN, GUILLEMONAT & LEVADITI (127).—Theory of immunity; EHRLICH (198).

What is meant by transmission of acquired characters?; CATTANEO (122).—Transmission of characters recently acquired; FISCHER (231).

## 9. EVOLUTION.

### a. General.

History of Evolution-theory, with a bibliography; FENIZIA (217).

Lectures on the Theory of Descent; FLEISCHMANN (233).—New Darwinism; HUTTON (349).

Von Baer's position in regard to purposive adaptations; STÖLZLE (674).

—Von Baer's position in regard to the descent of Man; STÖLZLE (675).

Chapter on evolution in revised edition of Grammar of Science; PEARSON (541).—Problems of evolution; HEADLEY (311).—Adaptations illustrated; KIDD (379).—Outlines of Darwinism; KLAATSCH (385).—Organic Evolution; MARSHALL (468).—The fundamental condition of progress in organic nature; RABL (581).—Bearing of fossil Ichthyology on the problem of evolution; TRAQUAIR (697).

The theory of pure race-types; AMMON (15).

### b. Variation.

Mutations of *Oenothera lamarckiana*; DE VRIES (722).—Limits of variability; CATTANEO (121).—Aims of quantitative study; DAVENPORT (164A).—The quantitative study of variation; CAMERANO (113–116), FRASSETTO (240).—History of the development of the quantitative study of variation; DAVENPORT (162, 164).—Some cases of saltatory variation; EIGENMANN (201).

On degeneration; MÖBIUS (497).—Seasonal dimorphism in *Cerastium furca*; MINKIEWICZ (492).

Certain laws of variation. I. The reaction of developing organisms to environment; VERNON (707).—Variation in *Io*; ADAMS (7).—Geographical and individual variation in *Mus sylvaticus* and its allies; BARRETT-HAMILTON (35).—Spontaneous abnormalities in Anura; BERTACCHINI (61).—Concerning species and subspecies; EVERMANN (215).

Variation and correlation in tibial spines of *Melanoplus*; DAVENPORT (163).—In shell of *Pecten irradians*; DAVENPORT (165).—In statoblasts of *Pectinatella magnifica*; DAVENPORT (166).—In *Sagartia lucia*; DAVENPORT (168).—Of rostrum of *Palæmonetes vulgaris*; DUNCKER (190).—In *Pleuronectes fesus*; DUNCKER (191).—In crest of *Daphnia hyalina*; ENTEMAN (213).—Among Hydromedusæ; HARGITT (306, 308).—In the jaws of *Nereis limbata*; HEFFERAN (313).—In hedgehog; LÖNNBERG (435).—In venation of *Trimerotropis*; MCNEIL (458).—Variation and regulation of abnormalities in *Hydra*; PARKE (533).—Multiplication of rays and bilateral symmetry in the 20-rayed starfish, *Pycnopodia helianthoides*; RITTER & CROCKER (606).

On the reaction of *Daphnia magna* to certain changes in its environment; WARREN (732).

Antennule replaced by a mandible in *Asellus*; BATESON (48).

Origin of malformations of antennæ and limbs in beetles; TORNIER (693).

What is an anomaly?; RABAUD (576).

Heterotypical differentiation ; RABAUD (574).

Notes on sino-japanese teratology ; NEVEU-LEMAIRE (518).

Tenth report on teratological literature ; WINDLE (747).

Methods of measurement ; ANDRES (16).

### c. *Modification: Environment and Function.*

The reaction of developing organisms to environment ; VERNON (707).—The reaction of *Daphnia magna* to certain changes in its environment ; WARREN (732).—Influence of electric currents on developing tadpoles ; CAPRIATI (117).—On lower animals ; CARLIGREN (118).—On stages in the development of Invertebrates ; CARLIGREN (119).

Tissue-changes induced by cold ; RISCHPLER (607).—On the accelerating effect of heat upon growth ; GALLOWAY (252).—Influence of surrounding temperature during hibernation ; MAUREL (478).

Latent life as an adaptation to cold or drought ; LALOY (403).

Modifications in cave-animals ; EIGENMANN (200, 202), EIGENMANN & DENNY (905).

Blind fishes ; EIGENMANN (204A).

Influence of different rays of the spectrum on development and colouration ; NENTUKOW (517).

Effects of temperature on colours of butterflies ; FISCHER (232).

Adaptation of Infusorians to concentrated solutions ; YASUDA (755).

Effects of ions on the aggregation of flagellated Infusorians ; GARREY (256).—The brusque adaptation of the stickleback (*Gasterosteus trachurus*) to alternations of fresh and salt water ; GIARD (270).—*Palaemonetes* and salinity ; JOHNSON & HALL (368).—Fauna of basins with variable salinity ; NORDENSKIÖLD (521).

On the influence of night ; GAULE (261).—On the influence of the season on the weight of the frog's muscles ; GAULE (262).—On seasonal changes in the amount of fat in fat-containing organs ; FUNKE (248).—Influence of the seasons on the animal economy ; MAUREL (477).—Hibernation ; MAUREL (478), MAUREL & DE REY-PAILHADE (479).—Influence of temperature on the reproduction of the Turbellarian, *Polycelis cornuta* ; VOIGT (720).—Resistance of Coccidæ to external influences ; REH (600).

Structural modifications after prolonged fasting ; YUNG (756).

### d. *Selection and Isolation.*

Import and scope of the selection-principle ; PLATE (556).—Selection in relation to the struggle of the determinants in parthenogenesis ; CELESIA (123).

The extinction of species ; MOREAU (504).—Causes of the depopulation of certain rivers ; RASPAIL (586).

### e. *Particular Problems.*

Means of defence in animals ; CALVERT (112).—Protective colouration and mimicry ; BÄCHLER (25).—Suggestions in regard to mimicry ; DISTANT (174), ROPE (617).—Observations on mimicry ; MARSHALL (467, 469), SHELFORD (655).—Notes on mimicry ; WAGNER, W. A. (725), WITCHELL (752 & 753).—Arguments against the Banner Mark theory of directive colouration ; THAYER (683).

Correlation between duration of life and the number of offspring ; BEETON (54).—An experimental proof of blood-relationship ; FRIEDENTHAL (242).

The species and the race ; SANSON (629).—On the acquisition of the power of flight in Vertebrates ; DÖDERLEIN (175).—Evolutionary import of the papillary lines of the hand and foot ; FÉRÉ (220 & 221).

Descent of man ; KLAATSCH (384).

Data for the problem of evolution in man ; BEETON, YULE & PEARSON (54), LEE & PEARSON (417), PEARSON (542).—Stray thoughts on the theory of organic evolution more especially as applied to man ; MUNRO (514).—Genesis of the vertebral column ; SPENCER (667).

Degeneration in the eyes of cave animals ; EIGENMANN (200, 203 & 204), EIGENMANN & DENNY (205).

Convergence as a cause of error in zoology ; HALLEZ (301).

Albinism and natural selection ; GARSTANG (258).

The song of birds,—a biological study ; HAECKER (299).

Significance of the hair-slope in mammals ; KIDD (380).

Evolution of antlers ; RÖRIG (610).

An experimental study in evolution, *Palæmonetes* and salinity ; JOHNSON & HALL (368).

Significance of increased size of the cerebrum in recent as compared with extinct mammals ; LANKESTER (408).—The animal mind as a factor in evolution ; PURNELL (571).

Symbiosis of ants and caterpillars ; THOMANN (686).





II. MAMMALIA.

BY

R. LYDEKKER.

CONTENTS.

	Page		Page
Introduction . . . . .	2	Canidæ and Procyonidæ	26
I. TITLES . . . . .	2	Mustelidæ and Ursidæ .	27
II. BIOLOGY.		Pinnipedia . . . . .	27
Anatomy . . . . .	19	Creodontia . . . . .	27
Development . . . . .	21	RODENTIA . . . . .	28
Variation; various notes	21	Sciuridæ, Castoridæ and	
Geographical distribution	21	Gliridæ . . . . .	28
Fossil faunas . . . . .	22	Muridæ . . . . .	28
III. SYSTEMATIC.		Spalacidæ, Heteromyi-	
PRIMATES . . . . .	23	dæ and Bathyergidæ	30
Anthropoidea . . . . .	23	Dipodidæ . . . . .	31
Lemuroidea . . . . .	23	Erethizontidæ and Octo-	
CHIROPTERA . . . . .	24	dontidæ . . . . .	31
Pteropodidæ . . . . .	24	Caviidæ . . . . .	31
Rhinolophidæ and		Leporidæ . . . . .	32
Nycteridæ . . . . .	24	Incertæ sedis . . . . .	32
Vespertilionidæ and		UNGULATA . . . . .	32
Natalidæ . . . . .	24	Artiodactyla . . . . .	32
Emballonuridæ and		Bovidæ . . . . .	32
Phyllostomatidæ . .	25	Cervidæ . . . . .	33
INSECTIVORA . . . . .	25	Tragulidæ and Camelidæ	33
Tupaiidæ and Macroscel-		Suidæ . . . . .	34
lidæ . . . . .	25	Perissodactyla . . . . .	34
Talpidæ and Soricidæ .	25	Hyracoidea . . . . .	34
Erinaceidæ and Cente-		Proboscidea . . . . .	34
tidæ . . . . .	26	Incertæ sedis . . . . .	34
CARNIVORA . . . . .	26	CETACEA . . . . .	35
Felidæ, Hyænidæ and		EDENTATA & EFFODIENTIA	35
Viverridæ . . . . .	26	MARSUPIALIA . . . . .	35
		MONOTREMATA . . . . .	36

## INTRODUCTION.

THE number of papers recorded for 1900 somewhat exceeds those enumerated in 1899; that list being in excess of the one for the previous year.

From a systematic and phylogenetic point of view, perhaps the two most important papers of the year are DOLLO's arboreal ancestry of Marsupials and OSBORN's researches on the extinct Rhinoceroses of Europe and North America. The last-named writer has also devoted a special contribution to the origin of Mammals, as deduced from the occipital condyles; and KINGSLEY contributes to the same subject from the standpoint of the auditory ossicles.

Much attention continues to be devoted to the Marsupials and Monotremes, HILL furnishing another contribution to the study of the generative organs of the former, while EGGELING treats of the dermal glands, and EMERY of the carpus and tarsus of the latter. The comparatively fresh subject of the arrangement of the papillary ridges on the palm and sole of the Primates has received attention from FÉRÉ, and also from the Recorder.

Among anatomical papers, special mention may be made of KLAATSCH's researches on the femoral muscles, of TANDLER's investigations of the cephalic arteries, and of LÖNNBERG's dissection of the Musk-Ox. PAULLI continues his researches on the pneumaticity of the skull; and STEHLIN has brought to a close his important investigations on the dentition and distribution of the Pigs.

W. L. SCLATER's work on the Mammals of South Africa is a valuable contribution to the faunistic history of that continent; while OSBORN's theory as to the origin of that fauna opens up new, not to say revolutionary, ideas.

Messrs SCLATER and THOMAS have brought to a conclusion the "Book of Antelopes," and many papers have been contributed, for the most part by well-known names, to the never-ending work of species-making. It is notable in this connection that American writers are devoting more and more of their attention to the Mammals of the Old World.

Palæontology has been singularly barren during the year, so far as Mammals are concerned, nothing of any special interest having been described.

## I. TITLES.\*

1. ALLEN, J. A. The North American Jumping Mice. Amer. Natural. xxxiv, pp. 199-202. [*Dipodidae*.]
2. —. Descriptions of new American Marsupials. Bull. Amer. Mus. xiii, pp. 191-199. [*Marsupialia*.]
3. —. On Mammals collected in South-eastern Peru by Mr H. H. Keays, with descriptions of new species. T. c. pp. 219-227. [*Rodentia*.]
4. —. The systematic name of the Cuban Red Bat. P. Washington Soc. xiii, p. 165. [*Chiroptera*.]
5. —. The proper name of the Viscacha. T. c. pp. 183 & 184. [*Octodontidae*.]

---

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

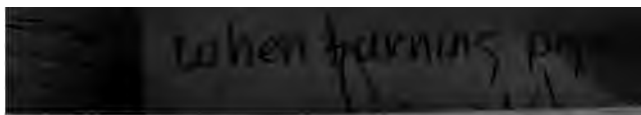
6. ALMERA, J. Sobre las especies *Acerotherium lemanense*, *Mastodon longirostris*, y un *Elephas* descubiertos en esta provincia de Barcelona. Bol. Ac. Barcelona (3) i, pp. 535-537. [*Proboscidea*.]
7. AMEGHINO, F. Mamíferos del cretáceo inferior de Patagonia (Formación de las areniscas abigarradas). Comun. Mus. Buenos Aires i, pp. 197-206, figg. [*Ungulata*, *Marsupialia*.]
8. —. Presencia de Mamíferos Diprotodontes en los depósitos terciarios del Paraná. An. Soc. Argent. xlix, pp. 235-240, figg. [*Marsupialia*.]
9. ANDERSON, R. J. The dentition of the Seal. Rep. Brit. Ass. 1900, pp. 790-792. [*Pinnipedia*.]
10. ANDREWS, C. W. A Monograph of Christmas Island (Indian Ocean). London, 8vo, pp. xv & 337, illustrated. Pp. 22-37 are devoted to the Mammals. [*Vespertilionidae* and *Muridae*.]
11. ARNBACK-CHRISTIE-LINDE, —. Zur Anatomie des Gehirnes niederer Säugethiere. Anat. Anz. xviii, pp. 8-16, figg.
12. AUERBACH, M. Die Unterkieferdrüsen von *Myoxus muscardinus*, Schreber. Rev. Suisse Zool. viii, pp. 45-53, pls. iv & v. [*Gliridae*.]
13. BÄCHLER, E. Beobachtungen am Siebenschläfer (*Myoxus glis*, L.). Ber. St. Gall. Ges. 1898-99, pp. 267-288. [*Gliridae*.]
14. BAILEY, V. Revision of American Voles of the genus *Microtus*. North Amer. Fauna, No. 17, 88 pp. 5 pls. [*Muridae*.]
15. BAKER, E. C. STUART. The Gaur and the Gayal. Asian, Feb. 20 and 27, pp. 528, 529, 556 & 559. [*Bovidae*.]
16. BANGS, O. A new Jack-Rabbit from Western Mexico. P. New England Zool. Club i, pp. 85 & 86. [*Leporidae*.]
17. —. List of the Mammals collected in the Santa Marta region of Colombia by W. W. Brown, Junr. T. c. pp. 87-102, pl. i. [*Muridae*.]
18. —. Description of a new Squirrel from Panama. Op. cit. ii, pp. 43 & 44. [*Sciuridae*.]
19. —. Three new Rodents from Southern Labrador. T. c. pp. 35-41. [*Muridae*, *Erethizontidae*.]
20. BARTLETT, A. D. & E. Bartlett's Life among Wild Beasts at the "Zoo." London, 1900, 8vo, pp. xviii & 373, illustrated.
21. BEDDARD, F. E. On the brain of a Siamang (*Hylobates syndactylus*). P. Zool. Soc. London 1900, pp. 187-190. [*Primates*.]
22. —. On the anatomy of *Bassaricyon alleni*. T. c. pp. 661-665. [*Procyonidae*.]
23. BEMMELEN, J. F. VAN. Ueber den Schädel der Monotremen. Zool. Anz. xxiii, pp. 449-461.
24. —. Further results of an investigation of the Monotreme skull. P. Ac. Amsterdam iii, pp. 130-132, & pl. [*Monotremata*.]
25. —. Third note concerning certain details of the Monotreme skull. T. c. pp. 405-407.
26. BERG, C. Notas sobre los nombres de algunos Mamíferos Sudamericanos. Comun. Mus. Buenos Aires i, pp. 219-222 & 200-203.
27. BERGE, R. Ueber das ehemalige Vorkommen der grösseren Raubsäugethiere in Sachsen. Zool. Garten xli, pp. 130-135.



28. BIGNOTTI, G. Sul tarso del *Mus decumanus*. Monit. Zool. ital. xi, suppl. pp. 17-19. [*Muridæ*.]
29. BILLARD, —. & CAVALIÉ, —. Les branches hépatiques chez le Chien. C.R. Soc. Biol. lii, pp. 511-513. [*Canidæ*.]
30. BÖKKH, H. *Orca semseyi*, eine neue *Orca*-Art aus dem unteren Miocæn von Salgotarjan. Mt. Ungar. geol. Anstalt xiii, pp. 105-107, pl. xiii, 1899. [*Cetacea*.]
31. BOFILL, A. Sobre los restos de dos Mamíferos fosiles de Cataluña, existentes en el Museo Martorell de la ciudad de Barcelona. Bol. Ac. Barcelona (3) i, pp. 532-534.
32. BOLK, L. Beiträge zur Affen-Anatomie; 1. Untersuchungen um schwangeren Uterus von *Semnopithecus*. Morphol. Jahrb. xviii, pp. 564-623, pl. xxx. [*Primates*.]
33. BONHOTE, J. L. On Squirrels of the *Sciurus maccllellandi* group. Ann. Nat. Hist. (7) v, pp. 50-54. [*Sciuridæ*.]
34. —. On the Squirrels of the *Ratufa (Sciurus) bicolor* group. T. c. pp. 490-499. [*Sciuridæ*.]
35. —. On a collection of Mammals from Siam made by Mr T. H. Lyle. P. Zool. Soc. London 1900, pp. 191-195, pl. xviii. [*Sciuridæ*.]
36. —. On the Mammals collected during the "Skeat Expedition" to the Malay Peninsula 1899-1900. T. c. pp. 869-883, pl. lvi. [*Muridæ*.]
37. BOVIN, P. & M. A propos du follicule de Graaf des Mammifères. C.R. Soc. Biol. lii, pp. 17 & 18.
38. BOULE, M. Observations sur quelques Équidés fossiles. Bull. Soc. geol. France xxvii, pp. 531-542. [*Perissodactyla*.]
39. BRANDT, A. Zur Phylogenie der Säugethierhaare. Biol. Centrbl. xx, pp. 572-592.
40. BRAUNER, A. Einige Bemerkungen über den Edelhirsch in der Krim. Zapiski Novoross. Obsch. 1900, pp. 1-14, pl. i. [*Cervidæ*.]  
BRIVES, A. [See FICHEUR and BRIVES (68).]
41. BROOM, R. On the development and morphology of the Marsupial shoulder-girdle. Tr. R. Soc. Edinb. xxxix, pp. 749-770, pls. i & ii. [*Marsupialia*.]
42. BUTLER, A. L. On a new Serow from the Malay Peninsula. P. Zool. Soc. London 1900, pp. 675 & 676. [*Bovidæ*.]  
CABRERA, A. [See LATORRE, A. CABRERA (120).]
43. CAPELLINI, G. Balenottere Mioceniche di San Micheli presso Cagliari. Mem. Ist. Bologna (5) vii, pp. 661-679, pls. i & ii. [*Cetacea*.]
44. —. Balenottera Miocenica della Repubblica di San Marino. Rend. Acc. Lincei (5) ix, pp. 233-236.
45. CARLSSON, A. Ueber die systematische Stellung der *Nandinia binotata*. Zool. Jahrb. Syst. xiii, pp. 509-528, pl. xxxvi. [*Viverridæ*.]  
CAVALIÉ, —. [See BILLARD and CAVALIÉ (29).]
46. CEDERBLUM, E. Ueber den Zahnwechsel bei den Nagern. Zool. Jahresber. xiii, pp. 269-286. [*Rodentia*.]
47. CHAPMAN, H. C. Observations upon the anatomy of *Hylobates leuciscus* and *Chiromys madagascariensis*. P. Ac. Philad. 1900, pp. 414-423. [*Primates*.]

48. CLELAND, J. Duplicity of cervix uteri in *Trichechus* and *Otaria*. J. Anat. Physiol. norm. path. xxxiv, pp. 159-162, pl. xxvii. [*Pinnipedia*.]
49. COCCHI, I. Osservazioni sui denti incisivi dell' Elefante Africano. Boll. Soc. geol. Ital. xix, pp. 26-35. [*Proboscidea*.]
50. COCKS, A. H. Note on the gestation of the Pine-Marten. P. Zool. Soc. London 1900, pp. 836 & 837. [*Mustelidæ*.]
51. CUNNINGHAM, J. T. Sexual dimorphism in the Animal Kingdom. London, 8vo, pp. xi & 317. [*Phocidæ, Cervidæ*.]
52. DAHMS, P. Der Biber in Westpreussen. Zool. Garten xli, pp. 87-93, 103-112, 214 & 215, figg. [*Castoridæ*.]
53. DEMIDOFF, PRINCE E. After Wild Sheep in the Altai and Mongolia. London, 8vo, pp. xii & 324, illustrated. [*Bovidæ*.]
54. DE VOS, H. A pertinent account and detailed description of the character, nature, coitus, and production of elephants in the great island of Ceylon. J. Ceylon Asiat. Soc. xv, pp. 176-200, 1899. [*Proboscidea*.]
55. DE WINTON, W. E. On the Mammals obtained in Southern Abyssinia by Lord Lovat during an expedition from Berbera to the Blue Nile. P. Zool. Soc. London 1900, pp. 79-84, pl. x.
56. —. Mammalia [in] Report on a collection made by Messrs F. V. McConnell and J. J. Quelch at Mount Roraima in British Guiana. Tr. Linn. Soc. London (2) viii, p. 52. [*Muridæ*.]
57. DOLLO, L. Le pied du *Diprotodon* et l'origine arboricole des Marsupiaux. Bull. Sci. France Belgique xxxiii, pp. 278-283, figg. [*Marsupialia*.]
58. DUBOIS, R. Recherches sur le fonctionnement musculaire chez la Marmotte chaude et chez la Marmotte froide. Ann. Soc. Linn. Lyon (2) xlvi, pp. 102-106. [*Sciuridæ*.]
59. DUGÈS, A. Moyen de reconnaître un crâne de Cuguar. Mem. Soc. Ant. Alzate xiv, pp. 361 & 362, pl. xi. [*Felidæ*.]
60. EGGELING, H. Ueber die Hautdrüsen der Monotremen. Anat. Anz. xvii, suppl. pp. 42-44. [*Monotremata*.]
61. ELLIOT, D. G. Description of an apparently new species of Mountain Goat. Field Mus. Zool. iii, pp. 1-5, pls. i-iv. [*Bovidæ*.]
62. EMERY, C. Ueber Carpus und Tarsus der Monotremen. Verh. Ges. Munchen lxxi, pp. 222 & 223. [*Monotremata*.]
63. FATIO, V. Deux petits Vertébrés nouveaux pour la Suisse (*Sorex pygmaeus*, Pall. et *Rana græca*, Boul.) et quelques intéressantes variétés. Rev. Suisse Zool. viii, pp. 467-476. [*Insectivora*.]
64. FAVARO, G. Le pieghe laterali del solco vestibolare inferiore della bocca rei Mammiferi. Atti Ac. Veneto lix, pp. 919-929.
65. FÉRÉ, C. Notes sur les mains et les empreintes digitales de quelques Singes. J. Anat. Physiol. xxxvi, pp. 255-267, pls. ix-xi. [*Primates*.]
66. —. Les lignes papillaires de la paume de la main. T. c. pp. 376-392, figg. [*Primates*.]
67. —. Les lignes papillaires de la plante du pied. T. c. pp. 602-618. [*Primates*.]

68. FICHEUR, E. & BRIVES, A. Sur la découverte d'une caverne à ossements, à la carrière des Bains-Romains, à l'ouest d'Alger. C.R. Ac. Paris cxxx, pp. 1485-1487.
69. FLOWER, S. S. On the Mammalia of Siam and the Malay Peninsula. P. Zool. Soc. London 1900, pp. 306-379.
70. —. Notes on the fauna of the White Nile and its tributaries. T. c. pp. 950-973.
71. FRAAS, E. Römische Statuetten von Wisent und Ur. Fundberichte aus Schwaben vii, pp. 37-40. [*Bovidae*.]
72. GAILLARD, C. Sur un nouveau Rongeur miocène. C.R. Ac. Paris cxxx, pp. 191 & 192. [*Rodentia*.]
73. GHIGLI, A. Sui denti dei Tapiridi. Anat. Anz. xvii, suppl. pp. 17-29, figg. [*Perissodactyla*.]
74. GRANDIDIER, G. Description d'ossements de Lémuriens disparus. Bull. Mus. Paris 1899, pp. 344-349. [*Lemuroidea*.]
75. —. Description d'une nouvelle espèce d'Insectivore provenant de Madagascar. T. c. p. 349. [*Insectivora*.]
76. —. Note sur des ossements d'animaux disparus provenant d'Am-bolisatra sur la côte sud-est de Madagascar. Op. cit. 1900, pp. 215-217. [*Lemuroidea*.]
77. —. Sur les Lémuriens subfossiles de Madagascar. C.R. Ac. Paris cxxx, pp. 482-485. [*Lemuroidea*.]
78. —. Note sur la coloration du pelage chez les Indris. Ann. Sci. Nat. (8) xi, p. 250. [*Lemuroidea*.]
79. GREVÉ, C. Die geographische Verteilung der Wildschäfe. KB. Ver. Riga xliii, pp. 131-145. [*Bovidae*.]
80. GRIMMER, J. Fossile Säugethierreste aus der Save. Wiss. Mt. Bosnien vi, 1899, pp. 842-850, figg. [*Ursidae*, *Bovidae*, *Cervidae*.]
81. GROSSER, O. Zur Anatomie der Nasenhöhle und des Rachens der einheimischen Chiropteren. Morphol. Jahrb. xxix, pp. 1-79, pls. i-iii. [*Chiroptera*.]
82. GULDBERG, G. Ueber die Körpertemperatur der Cetaceen. Nyt. Mag. Naturv. xxxviii, pp. 65-70. [*Cetacea*.]
83. GURWITSCH, A. Idiozom und Centralkörper im Ovarialeie der Säugethiere. Arch. mikr. Anat. lvi, pp. 377-391, pl. xvi.
84. HALL, R. Sea-Elephants on Kerguelen's Land. Zoologist (4) iv, pp. 441-447, fig. [*Pinnipedia*.]
85. HALLER, W. B. Vom Bau des Wirbelthiergehirns; iii Theil, *Mus*, nebst Bemerkungen über das Hirn von *Echidna*. Morphol. Jahrb. xxviii, pp. 347-477, pls. xx-xxvi. [*Muridae*, *Monotremata*.]
86. HAMBURGER, C. Studien zur Entwicklung der Mammarorgane. Anat. Anz. xviii, pp. 16-26, figg.
87. HAMILTON, G. E. H. BARRETT. Note on the Weasel, *Putorius (Ictis) nivalis*, Linn. and some of its subspecies. Ann. Nat. Hist. (7) v, pp. 41-50. [*Mustelidae*.]
88. —. Note on the Common Hedgehog (*Erinaceus europæus*, Linnæus) and its subspecies, or local variations. T. c. pp. 360-368. [*Erinaceidae*.]

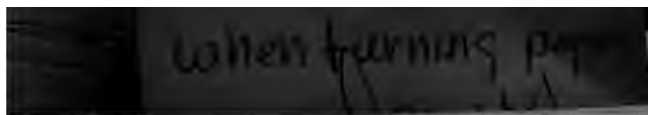


## TITLES.

Mamm. 7

89. [HAMILTON, G. E. H. BARRETT.] Further note on the Harvest Mouse (*Mus minutus*, Pall.) and its geographical variations. T. c. pp. 527-530. [*Muridæ*.]
90. —. Note on variation in the Weasel and Hedgehog. Op. cit. vi, pp. 243-246. [*Mustelidæ*, *Erinaceidæ*.]
91. —. On the genus *Muscardinus*. P. Zool. Soc. London 1900, pp. 85-87. [*Gliridæ*.]
92. —. On the Variable Hare (*Lepus timidus*). T. c. pp. 87-92. [*Leporidæ*.]
93. —. On a small collection of Mammals obtained by Captain Deasy in South Chinese Turkestan and Western Tibet. T. c. pp. 196 & 197. [*Muridæ*, *Dipodidæ*.]
94. —. On geographical and individual variation in *Mus sylvaticus* and its allies. T. c. pp. 387-428, pl. xxv. [*Muridæ*.]
95. HAUTHAL, R. Quelques rectifications relatives au *Grypotherium* de la caverne Eberhardt. Comun. Mus. Buenos Aires i, pp. 241-252. [*Edentata*.]
96. HEAPE, W. The "sexual season" of Mammals and the relation of the "pro-œstrum" to menstruation. Quart. J. Micr. Sci. xlv, pp. 1-70.
97. HEMPEL, E. Der Siebenschläfer (*Myoxus glis*) im Chemnitzthale, in Wechselburg, und Burgstadt. Ber. Ges. Chemnitz xxiv, pp. 98-105. [*Gliridæ*.]
98. HENKING, —. Ein Finwal (*Balaenoptera musculus*) bei Dievenow. Zool. Anz. xxiii, pp. 574-578. [*Cetacea*.]
99. HENNEBERG, B. Verhalten der Umbilicalarterien bei den Embryonen von Ratte und Maus. Anat. Anz. xvii, pp. 321-324. [*Muridæ*.]
100. HENNICKE, C. R. Ein Beitrag zur Entwicklungsgeschichte des Rehbockgehörns. Zool. Garten xli, pp. 379-381, pl. iii. [*Cervidæ*.]
101. HILL, J. P. Contributions to the morphology and development of the female urogenital organs in the *Marsupialia*; ii. On the female urogenital organs of *Myrmecobius fasciatus*. P. Linn. Soc. N. S. Wales xxv, pp. 519-532, pls. xvii-xix. [*Marsupialia*.]
102. HOEL, E. Ueber die Natur der circulären Fasern der capillaren Milzvenen. Anat. Anz. xvii, pp. 216-218.
103. HOFMANN, A. Fossilreste aus dem südmährischen Braunkohlenbecken bei Gaya. Jahrb. geol. Reichsanst. i, pp. 47-50, pls. iv & v.
104. HOLL, M. Ueber die Insel des Ungulatengehirnes. Arch. Anat. 1900, pp. 253-270, pl. xiv. [*Ungulata*.]
105. HONORÉ, C. Recherches sur l'ovaire du Lapin. Arch. Biol. xvi, pp. 537-600, pls. xxii-xxv. [*Leporidæ*.]
106. HOSE, C. A new Flying-Squirrel from Borneo. Ann. Nat. Hist. (7) v, pp. 214-216. [*Sciuridæ*.]
107. HRDLÍČKA, A. A bilateral division of the parietal bone in a Chimpanzee; with a special reference to the oblique sutures in the parietal. Bull. Amer. Mus. xiii, pp. 281-295. [*Primates*.]
108. JENTINK, F. A. On a peculiarly coloured Stoat in the collections of the Leyden Museum. Notes Leyden Mus. xxii, pp. 25 & 26. [*Mustelidæ*.]
109. —. The species of the Antelope-genus *Pediotragus*. T. c. pp. 33-43. [*Bovidæ*.]

110. JOHNSON, G. L. Contributions to the comparative anatomy of the Mammalian eye, chiefly based on ophthalmoscopic examination. P. R. Soc. London lxvi, pp. 474-478.
111. JUSTESSEN, P. T. Zur Entwicklung und Verzweigung des Bronchialbaumes der Säugethierlunge. Arch. mikr. Anat. lvi, pp. 606-650, figg.
112. KIDD, W. The significance of the hair-slope in certain Mammals. P. Zool. Soc. London 1900, pp. 676-686.
113. KINGSLEY, J. S. The ossicula auditus [and the origin of Mammals]. Tufts Coll. Studies, No. 6, pp. 203-274, pl.
114. KINKELIN, F. Beiträge zur Geologie der Umgegend von Frankfurt a. M.; v. *Palæonycteris* (?) *reinachi*, nov. sp. Ber. Senckenberg Ges. 1900, pp. 155-162. [*Chiroptera*.]
115. KLAATSCH, H. Der kurze Kopf des *Musculus biceps femoris* und des *Tenuissimus*; ein stammesgeschichtliches Problem. Morphol. Jahrb. xxix, pp. 217-281, pls. xiii & xiv.
116. KOBELT, W. Die *Moschusochse*. Ber. Senckenberg. Ges. 1900, pp. 61-66, pl. vii. [*Bovidae*.]
117. KOLLMAN, K. Ueber die Entwicklung der Placenta bei den Makaken. Anat. Anz. xvii, pp. 465-479. [*Primates*.]
118. KOKEN, E. Hochterrasse und Steppenfauna bei Tübingen. N. Jahrb. Min. 1900, i, pp. 143 & 144.
119. LANGKAVEL, B. Gewicht und Länge des Fischotters (*Lutra vulgaris*, L.). Zool. Garten xli, pp. 244 & 245. [*Mustelidae*.]
120. LATORRE, A. CABRERA. Estudios sobre una coleccion de Monos Americanos. An. Soc. Espan. xxix, pp. 65-93, pl. i. [*Primates*.]
121. LETACQ, A. L. Sur les Chauves-Souris observées dans les carrières de Moutiers-Hubert (Calvados), et quelques autres des environs de Vimautiers (Orne). Bull. Soc. Rouen xxxv, pp. 13-15. [*Chiroptera*.]
122. LÖNNBERG, E. On the soft anatomy of the Musk-Ox (*Ovibos moschatus*). P. Zool. Soc. London 1900, pp. 142-167 & 686-718, figg. [*Bovidae*.]
123. —. On a remarkable piece of skin from Cueva Eberhardt, Last Hope Inlet, Patagonia. T. c. pp. 379-384. [*Perissodactyla*.]
124. —. On the variation of the Weasel (*Putorius nivalis*, Linn.). Ann. Nat. Hist. (7) v, pp. 436-439. [*Mustelidae*.]
125. —. Note on the individual variation of the Common Hedgehog. (*Erinaceus europæus*, Linn.). T. c. pp. 542-544. [*Erinaceida*.]
126. LORENZ-LIBURNAU, L. v. Ueber einige Reste ausgestorbener Primaten von Madagascar. Denk. Ak. Wien lxx, pp. 1-11, pls. i-iii. [*Primates*.]
127. LOWEG, T. Studien über das Integument des *Erethizon dorsatus*. Jena. Zeitschr. xxxiv, pp. 833-866, pls. xxvii & xxviii. [*Erethizontidae*.]
128. LUCAS, F. A. A new Rhinoceros, *Trigonias osborni*, from the Miocene of South Dakota. P. U. S. Mus. xxiii, pp. 221-223, figg. [*Perissodactyla*.]



## TITLES.

Mamm. 9

129. [LUCAS, F. A.] The pelvic girdle of *Zeuglodon*, *Basilosaurus cetoides* (Owen), with notes on other portions of the osteology. T. c. pp. 327-331, pls. v-vii. [Cetacea.]
130. —. The dentition, etc., of *Basilosaurus cetoides*. Science (2) xii, pp. 809 & 810. [Cetacea.]
131. LYDEKKER, R. The Great and Small Game of India, Burma, and Tibet. London, 4to, pp. xviii and 416, illustrated. [Bovidae, Felidae.]
132. —. On an unnamed species of *Cervus* from Turkestan. Ann. Nat. Hist. (7) v, pp. 195 & 196. [Cervidae.]
133. —. An undescribed type of Rusine Deer. Op. cit. vi, pp. 204 & 205. [Cervidae.]
134. —. On a remarkable new species of Mangabey-like Monkey (*Cercocebus chrysogaster*). Nov. Zool. vii, pp. 279 & 280, pl. iii. [Primates.]
135. —. Note on two Mangabey-like Monkeys (*Cercocebus hagenbecki* and *Semnocebus albigena rothschildi*) now living in the menagerie of the Zoological Society. T. c. pp. 593-596. [Primates.]
136. —. A new race of Musk-Ox. Nature lxiii, p. 157. [Bovidae.]
137. —. Monkey hand-prints. Knowledge xxiv, pp. 3-6, figg. [Primates.]
138. McCURE, C. F. W. On the presence of a musculus coraco-olecranalis in the domestic cat (*Felis domestica*). Anat. Anz. xvii, pp. 357-360, fig. [Felidae.]
139. —. The variations of the venous system in *Didelphys virginiana*. Op. cit. xviii, pp. 441-460, figg. [Marsupialia.]
140. —. On the frequency of abnormalities in connection with the postcaval vein and its tributaries in the domestic cat (*Felis domestica*). Amer. Natural. xxxiv, pp. 185-198. [Felidae.]
141. MADSEN, A. P. [& others]. Affaldsdynger fra Stenalderen i Danmark. Copenhagen, 4to, 196 pp. illustrated.
142. MAGGI, L. Ossicini fontanellari coronali e lambdoidei nel cranio di Mammiferi e dell Uomo. Rend. Ist. Lombardo (2) xxxiii, pp. 298-315 & 321-331, pl. i.
143. —. Sullo sviluppo dell' os planum nello *Stenops gracilis*, e wormiani orbitali. T. c. pp. 688-694, figg. [Primates.]
144. —. Ossicini craniali nel *Vespertilio murinus*, Schreb. e nel *Rhinolophus ferrumequinum*, Keys. u. Blas. T. c. pp. 918 & 919. [Chiroptera.]
145. MAJOR, C. J. FORSYTH. Notes on the osteology of *Mus nativitatis* and *M. macleari*. [In] Andrews's Monograph of Christmas Island (q.v.), pp. 34-37. [Muridae.]
146. —. Extinct Mammalia from Madagascar; *Megaladapis insignis*, sp. n. Phil. Trans. cxci, pp. 47-50, pl. vi. [Primates.]
147. —. Summary of present knowledge of extinct *Primates* from Madagascar. Geol. Mag. (4) vii, pp. 492-499.
148. —. Remarks on remains of *Cyon sardous* from N. W. Sardinia. P. Zool. Soc. London 1900, p. 833. [Canidae.]

149. MATIEGKA, J. Doklad o pobytu diluvialního člověka v okolí mělnickém. SB. Bohmisch. Ges. 1899, art. 41, 2 pp. 1 pl. [*Cervidæ*.]
150. MATSCHIE, P. Geographische Formen der Hyänen. SB. Ges. naturf. Berlin 1900, pp. 18–58. [*Hyenidæ*.]
151. —. Bemerkungen über die in Berlin aufbewahrten Exemplare von *Anthropopithecus*. T. c. pp. 77–85. [*Primates*.]
152. —. Einige Säugethiere aus dem Hinterlande von Kamerun. T. c. pp. 88–100, fig. [*Primates, Felidæ*.]
153. —. Ueber *Orycteropus, Hystrix, Phacocheirus*, und einige andere Säugethiere aus dem Hinterlande von Togo in Deutsch West Africa. T. c. pp. 100–106. [*Effodientia*.]
154. —. Ueber den Schakal des Menam-Gebietes in Siam. T. c. pp. 144 & 145. [*Canidæ*.]
155. —. Eine neue Abart von *Georychus* aus Togo, Deutsch West Africa. T. c. pp. 145 & 146. [*Bathyergidæ*.]
156. —. Einige Formen der Gattung *Colobus*. T. c. pp. 181–189. [*Primates*.]
157. —. Geographische Abarten des afrikanischen Elefanten. T. c. pp. 189–197. [*Proboscidea*.]
158. —. Die Flecken-Hyäne des Hinterlandes von Kamerun. T. c. pp. 211–220. [*Hyenidæ*.]
159. —. Ueber *Equus peuricei*, Thos. T. c. p. 231. [*Perissodactyla*.]
160. MAXIMOW, A. Die ersten Entwicklungsstadien der Kaniuchen-placenta. Arch. mikr. Anat. lvi, pp. 699–739, pls. xxx & xxxi. [*Leporidae*.]
161. MEHELY, L. Monographia Chiropterorum Hungariæ. Budapest, 8vo, pp. xi & 372, pls. 22. [*Chiroptera*.]
162. MERRIAM, C. H. Descriptions of twenty-six new Mammals from Alaska and British North America. P. Washington Ac. ii, pp. 13–30. [*Insectivora, Canidæ, Rodentia*.]
163. —. Preliminary revision of the North American Red Foxes. T. c. pp. 661–676, pls. xxxvi & xxxvii. [*Canidæ*.]
164. —. Descriptions of two new Mammals from California. P. Soc. Washington xiii, pp. 151 & 152. [*Procyonidæ, Sciuridæ*.]
165. —. Description of a new Harvest Mouse (*Reithrodontomys*) from Mexico. T. c. p. 153. [*Muridæ*.]
166. MEWIUS, F. Zur Akklimatisation des Moschusochsen (*Ovibos moschatus*). Zool. Garten xli, pp. 332–334. [*Bovidæ*.]
167. MILLER, G. S. The Bats of the genus *Monophyllus*. P. Washington Ac. ii, pp. 31–38. [*Chiroptera*.]
168. —. A new Shrew from Eastern Turkestan. T. c. pp. 39 & 40. [*Insectivora*.]
169. —. The Giant Squirrels of Burmah and the Malay Peninsula. T. c. pp. 69–77. [*Sciuridæ*.]
170. —. Descriptions of two new Squirrels from Trong, Lower Siam. T. c. pp. 79–81. [*Sciuridæ*.]
171. —. Preliminary revision of the European Red-backed Mice. T. c. pp. 83–109. [*Muridæ*.]



## TITLES.

Mamm. 11

172. [MILLER, G. S.] Mammals collected by Dr W. L. Abbott on islands in the N. China Sea. T. c. pp. 203-246. [*Primatea*, *Chiroptera*, *Insectivora*, *Sciuridæ*, *Muridæ*, *Tragulidæ*.]
173. —. A collection of small Mammals from Mount Coffee, Liberia. T. c. pp. 631-649, figg. [*Chiroptera*, *Insectivora*, *Rodentia*.]
174. —. Three new Bats from the island of Curaçoa. P. Soc. Washington xiii, pp. 123-127. [*Chiroptera*.]
175. —. Seven new Rats collected by Dr W. L. Abbott in Siam. T. c. pp. 137-150. [*Muridæ*.]
176. —. The generic name *Eiotomys* not invalidated by *Anaptogonia*. T. c. p. 154. [*Muridæ*.]
177. —. The *Vespertilio concinnus* of Harrison Allen. T. c. p. 154. [*Chiroptera*.]
178. —. Note on *Micronycteris brachyotis* (Dobson) and *M. microtis*, Miller. T. c. pp. 154 & 155. [*Chiroptera*.]
179. —. The systematic name of the Cuban Red Bat. T. c. p. 155. [*Chiroptera*.]
180. —. Note on the *Vespertilio blythii* of Tomes. T. c. p. 155. [*Chiroptera*.]
181. —. The systematic name of the large Noctule Bat of Europe. T. c. p. 156. [*Chiroptera*.]
182. —. A new subgenus for *Lepus idahoensis*. T. c. p. 157. [*Leporidae*.]
183. —. A second collection of Bats from the island of Curaçoa. T. c. pp. 159-162. [*Chiroptera*.]
184. —. A new Gerbille from Eastern Turkestan. T. c. pp. 163 & 164. [*Muridæ*.]
185. —. Mammals collected by Dr W. L. Abbott on Pulo Lankawi and the Butang Islands. T. c. pp. 187-193. [*Muridæ*, *Tragulidæ*.]
186. —. A new Free-tailed Bat from Central America. Ann. Nat. Hist. (7) vi, pp. 470 & 471. [*Chiroptera*.]
187. —. A new Bat from Peru. T. c. pp. 570-574. [*Chiroptera*.]
188. MILLER, W. S. The epithelium of the peritoneal cavity of the Cat. Bull. Univ. Wisconsin ii, pp. 235-246, pls. xiv & xv. [*Felidæ*.]
189. MILNE-EDWARDS, A. Les Éléphants de la ménagerie du Muséum. Bull. Mus. Paris 1899, pp. 404 & 405. [*Proboscidea*.]
190. —. Description de deux espèces nouvelles de Rongeurs (*Muridés*) originaires de la Nouvelle-Guinée méridionale. T. c. 1900, pp. 165 & 166. [*Muridæ*.]
191. MINOT, C. S. The study of Mammalian embryology. Amer. Natural. xxxiv, pp. 913-941.
192. —. Ueber die mesothelialen Zotten der Allantois bei Schweins-embryonen. Anat. Anz. xviii, pp. 127-138. [*Suidæ*.]
193. MÜBIUS, K. Ueber die Grundlagen der æsthetischen Beurtheilung der Säugetiere. SB. Ak. Berlin xiv, pp. 164-182.
194. MÖLLER, H. Ueber *Elephas antiquus*, Falc. und *Rhinoceros mercki* als Jagdtiere des alt-diluvialen Menschen in Thüringen und über das erste Auftreten des Menschen in Europa. Zeitschr. Naturw. lxxiii, pp. 41-70, pl. ii. [*Ungulata*.]



195. MONTI, A. Su gli scheletri di alcune Scimmie rachitiche. Mem. Ist. Lombardo xix, pp. 39–47, pls. iii & iv. [*Primatea*.]  
— [See also RINA and MONTI (258).]
196. MONTI, R. & A. Sur l'epitelio renale delle Marmotte durante il sonno. Anat. Anz. xvii, suppl. pp. 82–87, figg. [*Sciuridæ*.]
197. NATTAN-LARRIER, L. Note sur la structure du foie du Cobaye nouveau-né. C.R. Soc. Biol. lii, pp. 881 & 882. [*Cariidæ*.]
198. NEHRING, A. Ueber *Alactaga suschkini*, Sat. und *A. annulata*, Milne-Edw. Zool. Anz. xxiii, pp. 201–205. [*Dipodidæ*.]
199. —. Nachtrag zu *Alactaga annulata* Milne-Edw. aus dem Kentei-Gebirge. T. c. pp. 263 & 264.
200. —. Die kaukasischen *Mesocricetus*-Arten nebst Beschreibung einer neuen Art; *Mesocricetus koenigi*, nov. spec. T. c. pp. 301–305, figg. [*Muridæ*.]
201. —. Ueber Schädel-, Gebiss- und Schwanzbildung von *Platycerconys platyrus*, Licht. T. c. pp. 361–366. [*Dipodidæ*.]
202. —. Ueber *Ctenomys pundi*, n. sp. und *Ct. minutus*, Nhrgr. T. c. pp. 420–423. [*Octodontidæ*.]
203. —. Die Priorität des Genusnamens *Cricetus*. T. c. p. 480. [*Muridæ*.]
204. —. Ueber *Ctenomys neglectus*, n. sp., *Ct. nattereri*, Wagn. und *Ct. lujanensis*, Amegh. T. c. pp. 535–541, figg. [*Octodontidæ*.]
205. —. Die Zahl der Mammæ bei *Cricetus*, *Cricetulus* und *Mesocricetus*. T. c. pp. 572 & 573. [*Muridæ*.]
206. —. Ueber das Horn eines *Bos primigenius* aus einem Torfmoore Hinterpommerns. SB. Ges. naturf. Berlin 1900, pp. 1–10, figg. [*Bovidæ*.]
207. —. Ueber die geographische Verbreitung von *Alactaga acontion* (Pall.) und *Alactaga elater* (Licht.). T. c. pp. 61–70, figg. [*Dipodidæ*.]
208. —. Die Schädel von *Ctenomys minutus*, Nhrgr., *Ct. torquatus*, Licht. und *Ct. pundi*, Nhrgr. T. c. pp. 201–210, figg. [*Octodontidæ*.]
209. —. Ueber das Vorkommen einer *Spalax*-Species in der Cyrenaica, sowie ueber *Spalax ægyptiacus*, Nhrgr. und *Sp. giganteus*, Nhrgr. T. c. p. 210. [*Spalacidæ*.]
210. —. Ueber *Lutra (Pteronura) paranensis*, Rengger, und ein Weibchen dieser Arten. T. c. p. 228. [*Mustelidæ*.]
211. —. Ueber das Vorkommen einer Blindmaus-Art in der Cyrenaica, nebst Bemerkungen ueber *Spalax ægyptiacus* und *S. giganteus*, Nhrgr. Zool. Garten xli, pp. 329–332. [*Spalacidæ*.]
212. NELSON, E. W. The correct name of the eastern form of the Fox-Squirrel (*Sciurus ludovicianus*). P. Soc. Washington xiii, pp. 169 & 170. [*Sciuridæ*.]
213. NEUMANN, O. Die von mir in den Jahren 1892–95 in Ost- und Central-Africa, speciell in den Massai-Ländern und den Ländern am Victoria Nyansa gesammelten und beobachteten Säugethiere. Zool. Jahrb. xiii, pp. 529–562. [*Primates*, *Insectivora*, *Carnivora*, *Rodentia*, *Ungulata*.]

214. NICOLAS, A. Note sur la presence de fibres musculaires striées dans la glande pinéale de quelques Mammifères. C.R. Soc. Biol. lii, pp. 576 & 577.
215. NOBRE, A. Sobre a presença do *Dolphins delphis*, var. *mediterranea*, nas costas do Algarve. Ann. Sci. Nat. Porto vi, p. 301 [Cetacea.]
216. NORDENSKIÖLD, E. Lakttagelser och fynd i grotter vid Ultima Esperanza i Sydvestra Patagonien. Svenska Ak. Handl. xxxiii, no. 3, 24 pp., 7 pls. [Edentata.]
217. NORDQUIST, O. Beitrag zur Kenntniss der isolirten Formen der Ringelrobbe *Phoca foetida*, Fabr.). Act. Soc. Faun. Fenn. xv, art. 7, 43 pp., 3 pls. [Pinnipedia.]
218. OSBORN, H. F. The angulation of the limbs of *Proboscidea*, *Dinocerata*, and other Quadrupeds, in adaptation to weight. Amer. Natural. xxxiv, pp. 89-94, figg.
219. —. Origin of the Mammalia, III Occipital condyles of Reptilian tripartite type. T. c. pp. 943-947, figg.
220. —. Phylogeny of the Rhinoceroses of Europe. Bull. Amer. Mus. xiii, pp. 229-267. [Perissodactyla.]
221. —. *Oryxena* and *Patriofelis* restudied as terrestrial Carnivora. T. c. pp. 269-279, pls. xviii & xix. [Creodonta.]
222. —. Correlation between Tertiary Mammal horizons of Europe and America. Ann. N. York Ac. xiii, pp. 1-73.
223. —. The geological and faunal relations of Europe and America during the Tertiary period and the theory of the successive invasions of an African fauna. Science (2) xi, pp. 561-574.
224. OSGOOD, W. H. Revision of the Pocket-Mice of the genus *Perognathus*. North Amer. Fauna, No. 18, 64 pp., 4 pls. [Heteromyidae.]
225. —. Mammals of the Yukon region. Ibid. No. 19, pp. 21-45, pls. iv-vii. [Mustelidae, Sciuridae, Muridae, Leporidae.]
226. OTTOLENGHI, D. Zur Histologie der thätigen Milchdrüse. Anat. Anz. xvii, suppl., pp. 148 & 149.
227. PAOLO, L. Sopra i resti di un cranio di *Campsodelphis* fossile scoperto nella mollassa miocenica del Bellunese. Atti Soc. Veneto-Trent. (2) iii, pp. 323-336. [Cetacea.]
228. PARSONS, F. G. The joints of Mammals compared with those of Man. J. Anat. Physiol. norm. path. xxxiv, pp. 41-68 & 301-323, figg. —. [See also WINDLE and PARSONS (341).]
229. PATTERSON, R. S. Notes on Irish Cetacea. Irish Natural. ix, pp. 210-212.
230. PAULLI, S. Ueber die Pneumaticität des Schädels bei den Säugethieren. Parts i & ii. Morphol. Jahrb. xxviii, pp. 179-251 & 483-564, pls. vii-xiv, & xxvii-xxix.
231. PAVLOW, M. (Madam). Études sur l'histoire paléontologique des Ongulés; vii, Artiodactyles anciens. Bull. Soc. Moscou 1899, pp. 1-62, pls. v & vi. [Artiodactyla.]
232. PAYS-MELLIER, G. Acclimatation, reproductions, et élevages de Mammifères ayant vécu ou vivant encore dans le Parc de la Pataudière (Indre-et-Loire). Rev. Sci. nat. appl. 1899, pp. 137-154, 171-177, and 313-336.

233. PHILIPPI, R. A. Las Focas Chilenas del Museo Nacional. An. Mus. Chile 1892, 52 pp., 23 pls. [*Pinnipedia*.]
234. —. El Guemal de Chile. Op. cit. 1892, 9 pp. 1 pl. [*Cervida*.]
235. Los Delfines de la Punta Austral de la América del Sud. Op. cit. 1893, 17 pp. 5 pls. [*Cetacea*.]
236. —. *Cervus antisensis, chilensis, brachyceros*. Op. cit. 1894, 16 pp. 4 pls. [*Cervida*.]
237. —. Los cráneos de los Delfines Chilenos. Op. cit. 1896, No. 12, 18 pp. 6 pls. [*Cetacea*.]
238. —. Descripción de los Mamíferos traídos del viaje de exploración a Tarapacá, hecho por orden del Gobierno en el Verano de 1884 a 1885. Op. cit. 1896, No. 13, 24 pp. 18 pls. [*Chiroptera, Rodentia*.]
239. —. Figuras i descripciones de los Murídeos de Chili. Op. cit. 1900, No. 14, 70 pp. 25 pls. [*Murida*.]
240. PIAZ, G. DEL. Sopra alcuni resti di *Squalodon* dell' arenaria Miocenica di Belluno. Palæontogr. ital. vi, pp. 303-314, pls. xxvi-xxix. [*Cetacea*.]
241. —. Sulla fauna fossile della grotta di S. Dona di Lamon. Atti Soc. Ital. xxxix, pp. 51-53.
242. PLATO, J. Ueber die "vitale" Färbbarkeit der Phagocyten des Menschen und einiger Säugethiere. Arch. mikr. Anat. lvi, pp. 868-917, pl. xxxv.
243. POCKOCK, R. I. Descriptions of three new forms of *Tragelaphus*. Ann. Nat. Hist. (7) v, pp. 94-96. [*Bovida*.]
244. —. Antelopes and their recognition-marks. Nature lxii, pp. 584-586. [*Bovida*.]
245. POUSARGUES, E. DE. Sur un nouveau Colobe découvert par M. Ed. Foa sur la rive occidentale du lac Tanganyika. Bull. Mus. Paris 1899, pp. 278-280. [*Primates*.]
246. PRIMROSE, A. The anatomy of the Orang-outang (*Simia satyrus*). Tr. Canad. Inst. vol. vi, pp. 507-598, figg. 1899. [*Primates*.]
247. RAWITZ, B. Die Anatomie des Kehlkopfes und der Nase von *Phocaena communis*, Cuv. Int. J. Anat. xvii, pp. 245-354, pls. vii-x. [*Pinnipedia*.]
248. REHN, J. A. On the Linnean genera *Myrmecophaga* and *Didelphis*. Amer. Natural. xxxiv, pp. 575-577. [*Edentata, Marsupialia*.]
249. —. General Notes [Nomenclature of Tarsier, Aard-Vark, Viscacha, etc.]. P. Soc. Washington xiii, pp. 165-170. [*Primates, Rodentia, Effodientia*.]
250. REGAUD, C. Note sur le tissu conjonctif du testicule chez le Rat. C.R. Soc. Biol. lii, pp. 26 & 27. [*Murida*.]
251. —. La prétendue division directe des spermatides chez les Mammifères. T. c. pp. 328 & 329.
252. REICHENBACH, E. S. v. Ueber Rhinoceros-Reste im Museum zu Leiden. Samml. geol. Mus. Leiden (2) ii, art. 2, 93 pp. 2 pls. [*Perissodactyla*.]
253. RETTERER, E. Structure et évolution des ganglions lymphatiques du Cobaye. C.R. Soc. Biol. lii, pp. 334-337. [*Cavida*.]

254. [REITTERER, E.] Évolution morphologique de l'amygdale du Chien. T. c. pp. 513-516. [*Canidae*.]
255. RETZIUS, G. Zur äusseren Morphologie des Riechhirns der Säugethiere und des Menschen. Biol. Untersuch. (2) viii, pp. 23-48, pls i-vi (1898).
256. —. Zur Kenntniss der ersten Entwicklung der Rückenmarkselemente bei den Säugethieren. T. c. pp. 102-104, pls. xxiii & xxiv (1898).
257. RIDLEY, H. N. On the use of the Slow Loris in Malay medicine. J. Straits Asiat. Soc. xxxiv, pp. 31-34. [*Primates*.]
258. RINA, S. C. & MONTI, A. Osservazioni su le Marmotte ibernanti. Rend. Ist. Lombardo (2) xxxiii, pp. 372-381. [*Sciuridae*.]
259. RÖRIG, A. Einiges über Cerviden. Zool. Garten xli, pp. 367-379, pl. ii. [*Cervidae*.]
260. ROLLINAT, R. & TROUESSART, E. Sur le sens de la direction chez les Chiroptères. C.R. Soc. Biol. 1900, pp. 604-607.
261. ROTH, S. Some remarks on the latest publications of Fl. Ameghino. Amer. J. Sci. (4) ix, pp. 261-266. [*Ungulata*.]
262. ROTHSCHILD, W. On a new race of Ibex, *Capra sibirica lydekkeri*, subsp. nov. Nov. Zool. vii, pp. 277 & 278, pl. viii. [*Bovidae*.]
263. SANCHEZ Y SANCHEZ, D. Los Mamíferos de Filipinas (Continuation). Ann. Soc. Espan. xxix, pp. 177-256.
264. SATUNIN, A. K. Eine neue Springmaus aus der Kirgisensteppe (*Atactaga uschkini*, nov. sp.). Zool. Anz. xxiii, pp. 137-140. [*Dipodidae*.]
265. SCHARFF, R. F. *Mormopterus whitleyi*—a new species of Bat from West Africa. Ann. Nat. Hist. (7) vi, pp. 569 & 570. [*Chiroptera*.]
266. —. A list of the Irish *Cetacea*. Irish Natural. ix, pp. 83-91, pls. iii & iv.
267. SCHEIBLER, F. Sette anni di caccia grossa e note di viaggio in America, Asia, Africa, Europa. Milan, 8vo, pp. xv & 525, illustrated.
268. SCHELLENBERG, K. Untersuchungen über das Grosshirnmark der Ungulaten. Jena. Zeitschr. xxxiv, pp. 113-214, pls. ix-xii. [*Ungulata*.]
269. SCHLOSSER, M. Die neueste Litteratur über die ausgestorbenen Anthropomorphen. Zool. Anz. xxiii, pp. 289-301. [*Primates*.]
270. —. Die Ausgrabungen im Dürreloch bei Schwaighausen nordwestlich von Regensburg. CB. Ges. Anthropol. 1900, pp. 41-46 (List of the Mammals).
271. —. *Ursus* oder *Ursavus*, oder *Hyænartcos*? Centralbl. Min. 1900, pp. 261-265, figg. [*Ursidae*.]
272. SCHWEIL, O. Text-Book of Zoology, treated from a Biological standpoint. Part i. Mammals. Translated by R. Rosenstock and edited by J. T. Cunningham. London, pp. vii & 138, illustrated.
273. SCHULZE, E. Catalogus Mammalium europæorum. Zeitschr. naturwiss. lxxiii, pp. 186-224.
274. SCLATER, P. L. On a new species of Reedbuck. P. Zool. Soc. London 1900, p. 429, pl. xxvi. [*Bovidae*.]

275. [SCLATER, P. L.] & THOMAS, O. The Book of Antelopes. Parts xv-xvii. [*Bovidae*.]
276. SCLATER, W. L. The Fauna of South Africa. Mammalia. 2 vols., London, 8vo, illustrated.
277. SEABRA, A. F. DE. Sobre um caracter importante para a determinação dos generos e especies dos *Microchiropteros*, e lista das especies d' este grupo existentes nas colleções do Museu Nacional (Continuação). J. Sci. Lisbon (2) vi, pp. 76-89, figg. [*Chiroptera*.]
278. —. Mammiferos de Portugal no Museu de Lisboa. T. c. pp. 90-115.
279. —. Diagnoses de quelques nouvelles espèces et variétés de Chiroptères d'Afrique. T. c. pp. 116-128. [*Chiroptera*.]
280. \*SELENKA, E. Menschenaffen (*Anthropomorphæ*); Studien über Entwicklung und Schädelbau. Wiesbaden, illustrated.
281. SELOUS, F. C. Sport and Travel, East and West. London, 8vo, pp. ix and 311, illustrated.
282. SIXTA, V. Vergleichend-osteologische Untersuchung über den Bau des Schädels von Monotremen und Reptilien. Zool. Anz. xxiii, pp. 213-229. [*Monotremata*.]
283. SJÖSTEDT, Y. Säugetiere aus Kamerun, West Afrika. Svenska Ak. Handl. xxiii, pt. iv, art. 1, 50 pp. 1 pl.
284. SLONAKER, J. R. A strange abnormality in the circulatory system of the common Rabbit (*Lepus sylvaticus*). Amer. Natural. xxiv, pp. 639 & 640. [*Leporidae*.]
285. —. A preliminary report on the eye of the Mole (*Scalops aquaticus macrhinus*). P. Indiana Ac. 1899, pp. 146-149, figg. [*Insectivora*.]
286. SORDELLI, F. Note su alcuni Vertebrati del Civico Museo di Milano; I. Sulla esistenza del genere *Spalax* nell' Africa Settentrionale. Atti Soc. Ital. xxviii, pp. 357-361. [*Spalacidae*.]
287. —. Ibid.; II. Sul *Sorex intermedius*, Cornalia. T. c. pp. 362-365. [*Soricidae*.]
288. SORNBORGER, J. D. The Labrador Flying Squirrel. Ottawa Natural. xiv, pp. 48-51. [*Sciuridae*.]
289. SOSNOWSKI, J. Sur les phénomènes d'électricité observés dans les nerfs des Mammifères. Bull. Ac. Cracovie 1900, pp. 137-151.
290. SOUTHWELL, T. Notes on the Seal and Whale fishery, 1899. Zoologist (4) iv, pp. 65-73. [*Pinnipedia* and *Cetacea*.]
291. SPENCER, B. A description of *Wynyardia bassiana*, a fossil Marsupial from the Tertiary beds of Table Cape, Tasmania. P. Zool. Soc. London 1900, pp. 776-794, pls. xlix & l. [*Marsupialia*.]
292. STEFANO, G. DE. Gli avanzi fossili del Mysticeti in Calabria. Boll. Soc. geol. Ital. xix, pp. 281-294. [*Cetacea*.]
293. STEHLIN, H. G. Ueber die Geschichte des Suiden-Gebisses. Part ii. Abh. Schweiz. pal. Ges. xxvii, pp. 337-527, pls. i-x. [*Suidæ*.]
294. STEPHENS, F. Descriptions of two new Mammals from Southern California. P. Soc. Washington xiii, p. 153. [*Chiroptera*, *Heteromyidae*.]

295. STONE, W. Report on the Birds and Mammals collected by the McIlhenny expedition to Point Barrow, Alaska. P. Ac. Philad. 1900, pp. 4-48. [*Felidæ*, *Mustelidæ*, *Muridæ*.]
296. —. Descriptions of a new Rabbit from the Liu Kiu Islands and a new Flying Squirrel from Borneo. T. c. pp. 460-463. [*Leporidae*, *Sciuridæ*.]
297. STUDER, T. Ueber fossile Knochen vom Wadi-Natron, Unter-egypten. Mt. Ges. Bern 1898, pp. 72-77.
298. SULLIVAN, M. The Bison still lives; a careful study and census of the Buffalo made to date. Boston Evening Transcript, October 10, p. 11. [*Bovidæ*.]
299. SYMINGTON, J. The cartilages of the Monotreme larynx. J. Anat. Physiol. norm. path. xxxiv, pp. 90-100, pls. vii-ix. [*Monotremata*.]
300. —. Note on the thymus gland in the Koala. T. c. pp. 226 & 227, pls. xxxiv & xxxv. [*Marsupialia*.]
301. TANDLER, J. Zur vergleichenden Anatomie der Kopfarterien bei den Mammalia. Denk. Ak. Wien lxvii, pp. 677-784, 8 pls.
302. TAYLOR, W. Notes on the marine Mammals of the North-east of Scotland. Ann. Scott. Nat. Hist. 1900, pp. 65-69. [*Pinnipedia* and *Cetacea*.]
303. —. Notes on the land Mammals of the Moray Firth area. T. c. pp. 137-142.
304. THOMAS, O. The geographical races of the Tayra (*Galictis barbara*), with notes on abnormally coloured individuals. Ann. Nat. Hist. (7) v, pp. 145-148. [*Mustelidæ*.]
305. —. New South American Mammals. T. c. pp. 148-153. [*Canidæ*, *Sciuridæ*, *Muridæ*.]
306. —. A new Bat from the Key Islands. T. c. p. 145. [*Chiroptera*.]
307. —. Description of a new Fruit-Bat from New Guinea. T. c. pp. 216 & 217. [*Chiroptera*.]
308. —. Descriptions of new Neotropical Mammals. T. c. pp. 217-222, and 269-274. [*Chiroptera*, *Carnivora*, *Rodentia*, *Marsupialia*.]
309. —. Descriptions of two new *Sciuropteri* discovered by Mr C. Hose in Borneo. T. c. pp. 275 & 276. [*Sciuridæ*.]
310. —. Descriptions of two new Murines from Peru and a new Hare from Venezuela. T. c. pp. 354-357. [*Muridæ*, *Leporidae*.]
311. —. A new Skunk from Peru. T. c. pp. 499 & 500. [*Mustelidæ*.]
312. —. On giant Squirrels from the Amazonian region. Op. cit. vi, pp. 137-139. [*Sciuridæ*.]
313. —. Descriptions of new Rodents from Western South America. T. c. pp. 294-302. [*Rodentia*.]
314. —. On the "Tohi," the East African Reedbuck currently known as *Cervicapra bohor*. T. c. pp. 303 & 304. [*Bovidæ*.]
315. —. On *Equus penricei*, a representative of the Mountain Zebra (*Equus zebra*, L.) discovered by Mr W. Penrice in Angola. T. c. pp. 465 & 466. [*Perissodactyla*.]
316. —. New Peruvian species of *Conepatus*, *Phyllotis*, and *Akodon*. T. c. pp. 466-469. [*Mustelidæ*, *Muridæ*.]

## C. NERVOUS SYSTEM; SENSE ORGANS.

Brain; ARNBACK-CHRISTIE-LINDE (11), BEDDARD (21), HALLER (85), HOLL (104), SCHELLENBERG (268), ZIEHEN (346); morphology of; RETZIUS (255).

Pineal gland; NICOLAS (214).

Spinal chord, development of; RETZIUS (256).

Electricity of nerves; SOSNOWSKI (289).

Thymus; SYMINGTON (300).

Eye; JOHNSON (110), SLONAKER (285).

Auditory ossicles; KINGSLEY (113), WEIL (339).

## D. MYOLOGY.

KLAATSCH (115), McCLURE (138), WINDLE & PARSONS (340).

## E. OSTEOLOGY.

*Zeuglodon*; LUCAS (129).

*Mus*; MAJOR (145); tarsus of *Mus*; BIGNOTTI (28).

*Primates*, pathological; MONTI (195).

Monotreme skull; BEMMELN (23-25), SIXTA (282), WILSON (340).

Monotreme carpus and tarsus; EMERY (62).

*Simia*, parietal; HRDLÍČKA (102).

Auditory ossicles; KINGSLEY (113), WEIL (339).

Cranial fontanelles, etc.; MAGGI (142-144).

Pneumaticity of skull; PAULLI (230).

Joints; PARSONS (228).

## F. ALIMENTARY SYSTEM.

a. *Dentition.*

*Phoca*; ANDERSON (9).

Succession in Rodents; CEDERBLUM (46).

*Elephas*; COCCHI (49).

*Tapirus*; GHIGLI (73).

*Zeuglodon*; LUCAS (130).

*Suidæ*; STEHLIN (293).

b. *General.*

Submaxillary glands; AUERBACH (12).

Buccal cavities; FAVARO (64).

Peritoneal epithelium; MILLER (188).

Liver, histology; NATAN-LARRIER (197).

Lymphatics; RETTERER (253).

## G. CIRCULATORY AND RESPIRATORY SYSTEMS.

Hepatic vessels; BILLARD & CAVALIÉ (29).

Umbilical vessels; HENNEBERG (99).

Mammary vessels; HOEL (102).

Cephalic vessels; TANDLER (301).

Abnormalities in vessels; McCLURE (139, 140), SLONAKER (284).

Phagocytes; PLATO (242).

Tonsils ; RETTERER (254).  
 Bronchus ; JUSTESSEN (111).  
 Larynx ; SYMINGTON (299).  
 Nasal chamber ; GROSSER (81), RAWITZ (247).

## H. URINO-GENITAL SYSTEM.

*Marsupialia* ; HILL (101).  
 Uterus ; BOLK (32), CLELAND (48).  
 Graafian follicle ; BOUIN (37).  
 Placenta ; KOLLMAN (117), MAXIMOW (160).  
 Allantois ; MINOT (192).  
 Umbilical arteries ; HENNEBERG (99).  
 Renal epithelium ; MONTI (196).  
 Carotid gland and suprarenal capsule ; VINCENT (333).  
 Testicle ; REGAUD (250).  
 Spermatozoa ; REGAUD (251).

## I. DEVELOPMENT, incl. EMBRYOLOGY.

General embryology ; MINOT (191).  
 Gestation ; COCKS (50).  
 Season ; HEAPE (96).  
 Ovum ; GURWITSCH (83), HONORÉ (105), WINIWARTER (342).  
 Bronchus ; JUSTESSEN (111).  
 Lymphatics and tonsils ; RETTERER (253, 254).  
 Spinal chord ; RETZIUS (254).  
 Auditory ossicles ; WEIL (339).

## K. VARIATION, AND VARIOUS NOTES.

Abnormalities ; HRDLÍČKA (107), McCLURE (139), SLONAKER (281).  
 Use in medicine ; RIDLEY (257).  
 Whaling and sealing ; SOUTHWELL (290).

## GEOGRAPHICAL DISTRIBUTION.

### 1. EASTERN HOLARCTIC.

Europe ; SCHULZE (273).  
 British Isles ; TAYLOR (302 & 303).  
 Saxony ; BERGE (27).  
 Switzerland ; FATIO (63).  
 Hungary ; MEHELY (161).  
 Portugal ; SEABRA (278).  
 Altai and Mongolia ; DEMIDOFF (53).  
 Central Asia ; BARRETT HAMILTON (93).  
 Tibet ; LYDEKKER (131).  
 Arabia ; THOMAS (319).

### 2. AFRICA and MADAGASCAR.

South Africa ; SCLATER (276).  
 Abyssinia ; DE WINTON (55).



East Africa, etc.; MATSCHIE (150-158), NEUMANN (213), THOMAS (322 & 323).

Nile Valley; FLOWER (70).

Liberia; MILLER (173).

Cameruns; SJÖSTEDT (283).

Origin of African fauna; OSBORN (223), STEHLIN (293).

### 3. S.E. AFRICA and ASIATIC ARCHIPELAGO.

Siam; BONHOTE (35), FLOWER (69), MILLER (170-175).

Malay Peninsula; BONHOTE (36), FLOWER (69).

India and Burma; LYDEKKER (131), MILLER (169).

Various islands; MILLER (172, 185).

Philippines; SANCHEZ (263).

### 4. NORTH AMERICA.

Alaska; MERRIAM (162), OSGOOD (225), STONE (295).

General (*Muridae*); BAILEY (14).

Prince Edward I.; YOUNG (330).

### 5. SOUTH AMERICA.

THOMAS (304, 307, 316, 325).

Peru; ALLEN (3).

Colombia; BANGS (17).

Guiana; DE WINTON (56).

Chile; PHILIPPI (233-239).

### *Fossil Faunas.*

Bosnia; GRIMMER (80).

Hungary; HOFMANN (103).

Denmark; MUDSEN (141).

Greece; VACEK (331).

Europe and N. America; OSBORN (222 & 223).

Algeria; FICHEUR & BRIVES (68).

Egypt; STUDER (297).

Madagascar; GRANDIDIER (74-77), LORENZ-LIBURNAU (126), MAJOR (146, 147).

Patagonia; AMEGHINO (7).

## III. SYSTEMATIC.

### GENERAL.

The *gracillimus*, or *tenuissimus* muscle (=short head of the *biceps flexor cruris*), its relations and presence, KLAATSCH, *Morphol. Jahrb.* xxix, p. 217; origin of occipital condyles from reptilian tripartite type, OSBORN, *Amer. Natural.* xxxiv, p. 943.

## I. PRIMATES.

A general account, WALLACE, *Studies Scientific and Social* i, pp. 146-184; *gracillimus* muscle, KLAATSCH, *Morphol. Jahrb.* xxix, p. 217; ricketts in monkeys, MONTI, *Mem. Ist. Lombardo* xix, p. 39; palm-impressions, LYDEKKER, *Knowledge* xxiv, p. 3, and FÉRÉ, *J. Anat. Physiol.* xxxvi, pp. 255, 376, 602; development and cranial structure of anthropoids, SELENKA (280).

## ANTHROPOIDEA.

- †*Pithecanthropus erectus*, relation to Man, with notes on other extinct Anthropoids, SCHLOSSER, *Zool. Anz.* xxiii, p. 289.  
*Anthropopithecus troglodytes*, distribution and nomenclature of subspecies, MATSCHIE, *SB. Ges. naturf. Berlin* 1900, p. 77; divided parietal, HRDLÍČKA, *Bull. Amer. Mus.* xiii, p. 281.  
*Simia satyrus*, anatomy, PRIMROSE, *Tr. Canad. Inst.* vi, p. 507.  
*Hylobates leuciscus*, anatomy, CHAPMAN, *P. Ac. Philad.* 1900, p. 414; *syndactylus*, brain, BEDDARD, *P. Zool. Soc. London* 1900, p. 187.  
*Semnopithecus*, gravid uterus, BOLK, *Morphol. Jahrb.* xxviii, p. 564.  
*Macacus pumilus*, Tambelan Ids., MILLER, *P. Washington Ac.* ii, p. 241, n. sp.; development of placenta in genus, KOLLMAN, *Anat. Anz.* xvii, p. 465; *inuus* at Gibraltar, SCLATER, *P. Zool. Soc. London* 1900, p. 773; remains of sp. non. det. from superficial deposits of Mauritius, F. MAJOR, *P. Zool. Soc. London* 1900, p. 832.  
*Cercopithecus centralis*, Uganda, NEUMANN, *Zool. Jahrb. Syst.* xiii, p. 533; *omensis*, Omo R., N.E. Africa, THOMAS, *P. Zool. Soc. London* 1900, p. 801, n. spp.  
*Cercocebus chrysogaster*, p. 279, pl. iii, *hagenbecki*, p. 594, Congoland, LYDEKKER, *Nov. Zool.* vii, n. spp.  
*Semnocebus albigena rothschildi*, Congoland, *a. johnstoni*, Lake Tanganyika, LYDEKKER, t. c. p. 595, n. subsp.  
*Colobus foai*, Tanganyika, POUSARGUES, *Bull. Mus. Paris* 1899, p. 178; *abyssinicus* (= *guereza*) *poliurus*, Omo R., THOMAS, *P. Zool. Soc. London* 1900, p. 80, n. sp. and sub. sp.  
*Ptilocolobus preussi*, Cameruns, p. 183, *gordonorum*, German E. Africa, p. 186, MATSCHIE, *SB. Ges. naturf. Berlin* 1900, n. spp.  
*Papio yokoensis*, Yoko, MATSCHIE, t. c. p. 89, n. sp.  
*Callithrix cuprea leucometopa*, Ecuador, LATORRE, *An. Soc. Espan.* xxix, p. 83, n. subsp.

## LEMUROIDEA.

- Extinct Malagasy, F. MAJOR, *Geol. Mag.* (4) vii, p. 492.  
*Indris*, coloration, GRANDIDIER, *Ann. Sci. Nat.* (8) xi, p. 250.  
†*Palaeochirogaleus*, n. g. for *P. jullyi*, n. sp., Pleistocene, Madagascar, GRANDIDIER, *Bull. Mus. Paris* 1899, p. 345; = *Lemur*, sp., F. MAJOR, *Geol. Mag.* (4) vii, p. 494.  
†*Palaeopropithecus*, n. g. for *P. ingens*, n. sp., Pleistocene, Madagascar, GRANDIDIER, *Bull. Mus. Paris* 1899, p. 345.  
†*Bradylemur*, n. g. 1899, p. 346, for *B. robustus*, n. sp. p. 348, *bastardi*, n. sp. 1900, p. 215, Pleistocene, Madagascar, GRANDIDIER, op. cit.; = *Nesopithecus* (? = *Lophiolemur*, or *Archæolemur*, Filhol.), F. MAJOR, *Geol. Mag.* (4) vii, p. 495.  
†*Megaladapis brachycephalus*, p. 8, *dubius*, p. 12, Pleistocene, Madagascar, LORENZ-LIBURNAU, *Denk. Ak. Wien* lxx, n. spp.; *insignis* [*Zool. Rec.*

- xxxvi, *Mamm.* p. 24) described by F. MAJOR, *Phil. Trans.* cxcii, p. 47, pl. vi.  
 †*Globilemur* = †*Nesopithecus*, F. MAJOR, *P. Zool. Soc. London* 1899, p. 988.  
 †*Mesoadapis*, n. g. for *M. destructor*, n. sp., Pleistocene, Madagascar, LORENZ-LIBURNAU, t. c. p. 10; both the above identified by F. MAJOR, *Geol. Mag.* (4) vii, p. 493 with his *Megaladapis insignis*.  
 †*Protoindris*, n. g. for *P. globiceps*, n. sp., Pleistocene, Madagascar, LORENZ-LIBURNAU, t. c. p. 11; = *Nesopithecus australis*, F. MAJOR, op. cit. p. 496.  
 †*Hadropithecus*, n. g. for *H. stenognathus*, n. sp. Pleistocene, Madagascar, LORENZ-LIBURNAU, t. c. p. 2; see also F. MAJOR, op. cit. p. 499.  
 †*Pithecodon*, n. g. for *P. sikoræ*, n. sp., Pleistocene, Madagascar, LORENZ-LIBURNAU, t. c. p. 13.  
*Nycticebus tardigradus*, its medicinal use among the Malays, RIDLEY, *J. Straits Asiat. Soc.* xxxiv, p. 31; (= *Stenops*), cranial bones, MAGGI, *Rend. Ist. Lombardo* (2) xxxiii, p. 688.  
*Chiromys madagascariensis*, anatomy, CHAPMAN, *P. Ac. Philad.* 1900, p. 414.

## II. CHIROPTERA.

Sense of direction, ROLLINAT & TROUESSART, *C.R. Soc. Biol.* 1900, p. 604; palatal ridges, SEABRA, *J. Sci. Lisb.* (2) vi, p. 76; anatomy of nose and throat, GROSSER, *Morphol. Jahrb.* xxix, p. 1; bats of Calvados, LETACQ, *Bull. Soc. Rouen* xxxv, p. 13, of Hungary, MEHELY (161); cranial bones, MAGGI, *Rend. Ist. Lombardo* (2) xxxiii, p. 298.

### PTEROPODIDÆ.

- Pteropus lepidus*, Tambelan Ids., MILLER, *P. Washington*, Ac. ii, p. 237, n. sp.  
*Cephalotes aïllo*, New Guinea, THOMAS, *Ann. Nat. Hist.* (7) v, p. 216, n. sp.

### RHINOLOPHIDÆ and NYCTERIDÆ.

- Rhinolophus achilles*, Key Ids., THOMAS, *Ann. Nat. Hist.* (7) v, p. 145, *minutus*, Anambas Ids., MILLER, *P. Washington* Ac. ii, p. 235, n. spp.  
*Hipposiderus barbensis*, St Barbe Id., MILLER, t. c. p. 233, n. sp.  
*Megaderma gigas*, Australia, a second specimen, WAITE, *Rec. Austral. Mus.* iii, p. 188.

### VESPERTILIONIDÆ and NATALIDÆ.

- Vespertilio atacamensis*, Peru, p. 1, *capucinus*, Chili, p. 2, Philippi, *An. Mus. Chile*, No. 13 (1896), n. spp.  
*Myotis nesopolus*, Curaçoa, MILLER, p. 123, *californicus pallidus*, California, STEPHENS, p. 153, *P. Soc. Washington* xiii, n. spp.; *Vespertilio concinnus*, H. Allen = *M. nigricans* (Maximilian), p. 155, *M. blythei*, note on p. 155, MILLER, t. c.  
*Vesperugo flavescens*, pp. 23 & 113, *anchietæ*, pp. 26 & 120, Angola, SEABRA, *J. Sci. Lisb.* (2) vi, n. spp.  
*Pipistrellus murrayi*, Christmas Id. ANDREWS, monograph of Christmas Island, p. 26; *minusculus*, Liberia, MILLER, *P. Washington* Ac. ii, p. 647, n. spp.  
*Lasurus pfeifferi* (Grundlach, 1861) supersedes *L. blossevillei*, Gervais, ALLEN, *P. Soc. Washington* xiii, p. 165; see also REHN, t. c. p. 165; MILLER, t. c. p. 155, adopts the name *L. blossevillei*.

- Tomopeas*, n. g. p. 570, for *T. rarus*, Peru, p. 571, n. sp., MILLER, Ann. Nat. Hist. (7) vi.  
*Cerivoula harrisoni*, N.E. Africa, THOMAS, P. Zool. Soc. London 1900, p. 802, n. sp.  
†*Palæonycteris* (?) *reinachi*, Tertiary, Frankfurt a. M., KOBELT, Ber. Senckenberg. Ges. 1900, p. 155, n. sp.  
*Pterygiotes maximus*, the name for the larger form of the noctule, MILLER, P. Soc. Washington xiii, p. 156.  
*Natalus tumidirostris*, Curaçoa, MILLER, op. cit. p. 160, n. sp.

## EMBALLONURIDÆ and PHYLLOSTOMATIDÆ.

- Emballonura anambensis*, Anambas Ids., MILLER, P. Washington Ac. ii, p. 236, n. sp.  
*Molossus pygmaeus*, Curaçoa, MILLER, P. Soc. Washington xiii, p. 162, n. sp.  
*Promops nanus*, Central America, MILLER, Ann. Nat. Hist. (7) vi, p. 470; *affinis*, p. 91, *milleri*, p. 92, Colombia, ALLEN, Bull. Amer. Mus. xiii; n. spp.  
*Mormopterus whitleyi*, Benin, W. Africa, SCHARFF, Ann. Nat. Hist. (7) vi, p. 569, n. sp.  
*Nyctinomus anchietae*, pp. 82 & 123, *brunneus*, pp. 83 & 125, *bocagei*, pp. 84 & 127, Angola, SEABRA, J. Sci. Lisb. (2) vi, n. spp.  
*Mormops intermedia*, Curaçoa, MILLER, P. Soc. Washington xiii, p. 160, n. sp.  
*Glossophaga elongata*, Curaçoa, MILLER, op. cit. p. 124, n. sp.  
*Monophyllus portoricensis*, Porto Rico, p. 34, *plethodon*, Barbados, p. 35, MILLER, op. cit. n. spp.  
*Vampyrops dorsalis*, Ecuador, THOMAS, Ann. Nat. Hist. (7) v, p. 269, n. sp.  
*Chiroderma jesupi*, Colombia, ALLEN, Bull. Amer. Mus. xiii, p. 88, n. sp.  
*Micronycteris brachyotis* (Dobson) and *M. microtis*, Miller, compared, MILLER, P. Soc. Washington xiii, p. 154; *hypoleuca*, Colombia, ALLEN, Bull. Amer. Mus. xiii, p. 90, n. sp.  
*Leptonycteris curasoæ*, Curaçoa, MILLER, P. Soc. Washington xiii, p. 126, n. sp.

## III. INSECTIVORA.

## TUPAIIDÆ and MACROSCOLIDIDÆ.

- Tupaia binocæ*, Tambelan Ids., p. 229, *sordida*, Tioman Id., p. 231, *chrysomalla*, Anambas Ids., p. 232, MILLER, P. Washington Ac. ii, n. spp.  
*Macroscelides boranus*, N.E. Africa, THOMAS, P. Zool. Soc. London 1900, p. 802, n. sp.  
*Petrodomus matschiei*, E. Africa, NEUMANN, Zool. Jahrb. Syst. xiii, p. 540, n. sp.  
*Rhynchocyon petersi usambaræ*, p. 542, *p. fischeri*, p. 543, E. Africa, NEUMANN, t. c. n. subsp.

## TALPIDÆ and SORICIDÆ.

- Scalops aquaticus*, eye, SLONAKER, P. Indiana Ac. 1899, p. 146.  
*Sorex intermedius*, Cornalia, a composite of *Sorex* and *Neomys*, SORDELLI, Atti Soc. Ital. xxxviii; *glacialis*, *tundrensis*, p. 16, *personatus arcticus*,

- p. 17, *alascensis shumaginensis, navigator alaskanus*, p. 18, Alaska, MERRIAM, P. Washington Ac. ii; *vulgaris nigra*, Switzerland, FATIO, Rev. Suisse Zool. viii, p. 470; n. spp. & subsp.  
*Crociodura bicolor sansibarica*, Zanzibar, *flavescens nyansa*, Nyanza, *martienseni*, Kilimanjaro, NEUMANN, Zool. Jahrb. Syst. xiii, p. 544; *lignicolor*, E. Turkestan, MILLER, P. Washington Ac. ii, p. 39; n. spp. & subsp.  
*Myosorex muricauda*, Liberia, MILLER, P. Washington Ac. ii, p. 645, n. sp.

## ERINACEIDÆ and CENTETIDÆ.

- Erinaceus europæus occidentalis*, p. 362, Scotland, *eu. hispanicus*, p. 363, Spain, *eu. italicus*, p. 364, Italy, *eu. roumanicus*, p. 365, Rumania, *eu. consolei*, p. 366, Sicily, B. HAMILTON, Ann. Nat. Hist. (7) v, n. subsp.; variation in *europæus*, LÖNNBERG, t. c. p. 542, HAMILTON, ibid. vi, p. 243.  
*Microgale brevicauda*, Madagascar, GRANDIDIER, Bull. Mus. Paris 1899, p. 349, n. sp.

## IV. CARNIVORA.

## FELIDÆ, HYÆNIDÆ and VIVERRIDÆ.

- Felis catus*, peritoneal epithelium, MILLER, Bull. Univ. Wisconsin ii, p. 235; coraco-olecranal muscle, McCURE, Anat. Anz. xvii, p. 357, venal abnormalities, Amer. Natural. xxxiv, p. 185; *concolor*, cranial characters, DUGÉS, Mem. Soc. Ant. Alzate xiv, p. 361; *pardus panthera*, for the Persian leopard, LYDEKKER, Game of India, etc., p. 306; *leopardus suahelicus*, E. Africa, NEUMANN, Zool. Jahrb. Syst. xiii, p. 551; *leo somaliensis*, Somaliland, NOACK, Jahrb. Hamburg. Anat. ix, p. 48 (1891), *l. kamptzi*, Cameruns, MATSCHIE, SB. Ges. naturf. Berlin 1900, p. 98; *l. massaicus*, Massailand, NEUMANN, Zool. Jahrb. Syst. xiii, p. 550: n. subsp.  
*Lynx canadensis mollipilosus*, Alaska, STONE, P. Ac. Philad. 1900, p. 48, n. subsp.  
*Hyæna vissmanni*, Epukiro, p. 22, *gariepensis*, Orange river district, p. 25, *germinans*, Lake Rukwa, p. 26, *thierryi*, Togo, p. 30, *togoensis*, Togo, p. 31, *syriaca*, Syria, p. 54, *schillingsi*, Kilimanjaro district, p. 55, *noltei*, Cameruns, p. 215, MATSCHIE, SB. Ges. naturf. Berlin 1900: n. spp.  
*Nandinia binotata*, its anatomy, systematic position, and affinity to †*Amphictis*, CARLSSON, Zool. Jahrb. Syst. xiii, p. 509.

## CANIDÆ and PROCYONIDÆ.

- Canis sechuræ*, Peru, THOMAS, Ann. Nat. Hist. (7) v, p. 148; *cruesemanni*, Siam, MATSCHIE, SB. Ges. naturf. Berlin 1900, p. 145, n. spp. Hybrid fox and dog, POCKOCK, Zoologist (4) iv, p. 477; *familiaris*, hepatic blood-vessels, BILLARD & CAVALIÉ, C.R. Soc. Biol. lii, p. 511; evolution of tonsils, RETTERER, op. cit. p. 513.  
*Vulpes harrimani*, Kadiak Id, p. 14, *hallensis*, Hall. Id, p. 15, *necator*, California, p. 664, *cascadensis*, Cascade Range, p. 665, *rubricosa bangsi*, Labrador, p. 667, *alascensis*, Alaska, p. 668, *alascensis*

- abietorum*, B. Columbia, p. 669, *regalis*, Minnesota, p. 672, MERRIAM, P. Washington Ac. ii : n. spp. & subsp.  
*Cyon tsaardous*, from Sardinian caves, note on, and relation of genus to *Lycan*, F. MAJOR, P. Zool. Soc. London 1900, p. 833.  
*Procyon pallidus*, California, MERRIAM, P. Soc. Washington xiii, p. 152, n. sp.  
*Bassaricyon alleni*, anatomy, BEDDARD, P. Zool. Soc. London 1900, p. 681.

## MUSTELIDÆ and URSIDÆ.

- Cynictis* and *Galictis*, together with *Mephitis*, separated from their respective families, on account of the structure of the eye, and grouped as *Cynictidæ*, JOHNSON, P. R. Soc. London lxvi, p. 478.  
*Galictis barbara senex*, Vera Cruz, *b. biologica*, Panama, p. 146, *b. trinitatis*, Trinidad, p. 148, THOMAS, Ann. Nat. Hist. (7) v, n. subsp.  
*Conepatus zorilla*, v, p. 217, *arequipæ*, vi, p. 467, Peru, THOMAS, op. cit. n. spp.  
*Lutreola vison ingens*, Alaska, OSGOOD, North Amer. Fauna No. 19, p. 42, n. subsp.  
*Mustela americana actuosa*, Alaska, OSGOOD, t. c. p. 43, n. subsp.; *martes*, gestation, COCKS, P. Zool. Soc. London 1900, p. 836.  
*Putorius nivalis italicus*, p. 45, Italy, *n. ibericus*, p. 45, Spain, *n. siculus*, p. 46, Sicily, *n. caucasicus*, p. 48, Caucasus, *n. pallidus*, p. 48, Kokand, B. HAMILTON, Ann. Nat. Hist. (7) v; *rixosus eskimo*, Alaska, STONE, P. Ac. Philad. 1900, p. 44; n. subsp.; variation in *nivalis*, LÖNNBERG, v, p. 436, HAMILTON, vi, p. 243, Ann. Nat. Hist. (7), in *erminea*, JENTINK, Notes Leyden Mus. xxii, p. 25.  
*Lutra paranensis* referred to subgenus *Pteronura*, NEHRING, SB. Ges. naturf. Berlin 1900, p. 221; *vulgaris*, weight and dimensions, LANGKAVEL, Zool. Garten xli, p. 244.  
† *Ursavus minutus*, its synonymy, SCHLOSSER, Centralbl. Min. 1900, p. 261.  
*Ursus tspelæus* from Bosnia, GRIMMER, Wiss. Mt. Bosnien vi, p. 842.

## PINNIPEDIA.

- Of Scotland, TAYLOR, Ann. Scott. Nat. Hist. 1900, p. 69; Sealing, SOUTHWELL, Zoologist (4) iv, p. 65; duplicity of *cervix uteri* in *Odobenus* (= *Trichechus*) and *Otaria*, CLELAND, J. Anat. Physiol. norm. path. xxxiv, p. 159.  
*Phoca vitulina*, dentition, ANDERSON, Rep. Brit. Ass. 1900, p. 790; *fatida saimensis*, Lake Saima, p. 28, *ladogensis*, Lake Ladoga, p. 33, NORDQUIST, Acta Soc. Faun. Fenn. xv, art. 7, n. subsp.; *fatida sibirica*, p. 36, and *f. caspica*, p. 39, GMELIN, are the respective titles of the Baikal and Caspian forms.  
*Otaria vitulina*, p. 14, *fulva*, p. 17, *rufa*, p. 28, *argentata*, p. 38, *brachydactyla*, p. 43, *leucostoma*, p. 46, S. America, PHILIPPI, An. Mus. Chile 1892 (vide supra, p. 14, No. 233), n. spp.  
*Macrorhinus leoninus*, note on, with fig., HALL, Zoologist (4) iv, p. 441; also figured by CUNNINGHAM, Sexual Dimorphism, pp. 67 & 68.

## †CREODONTIA.

- Oxyæna* and *Patriofelis*, osteology and affinities, OSBORN, Bull. Amer. Mus. xiii, p. 269.

## V. RODENTIA.

Tooth-change, CEDERBLOM, Zool. Jahresber. xiii, p. 269.

## SCIURIDÆ, CASTORIDÆ and GLIRIDÆ.

- Sciurus maccllellandi manipurensis*, Manipur, *m. maritimus*, Fokien, p. 51, *m. monticolus*, Fokien, *m. formosunus*, Formosa, p. 52, BONHOTE, Ann. Nat. Hist. (7) v; *stramineus guayanus*, Ecuador, v, p. 150, *cocalis*, Amazonia, vi, p. 138, *simonsi*, Ecuador, p. 294, *peruanus napi*, Rio Napo, p. 295, *versicolor*, Ecuador, p. 385, THOMAS, t. c.; *notatus miniatus*, p. 79, *tenuis surdus*, p. 80, Siam, *mimellus*, p. 218, *abbotti*, p. 224, *klassi*, p. 225, Tambelan Ids, *mimicolus*, p. 219, St Barbe Id, *tenuirostris*, p. 221, Tioman Id, *anambensis*, p. 223, Anambas Ids, *rufobrachiatus libericus*, Liberia, p. 633, MILLER, P. Washington Ac. ii; *variabilis morulus*, BANGS, P. New England Zool. Club ii, p. 43; *hudsonicus petulans*, Alaska, OSGOOD, North Amer. Fauna, No. 19, p. 27; n. spp. & subsp.; *ludovicianus neglectus* (Gray, 1867) stands for *l. vicinus*, BANGS, 1896, NELSON, P. Soc. Washington xiii, p. 170.
- Funambulus castaneus*, Anambas Ids, MILLER, P. Washington Ac. ii, p. 217, n. sp.
- Ratufa ephippium baramensis*, Baram, p. 496, *e. sandakanensis*, Sandakan, p. 497, *e. nanogigas* and *e. sirhassenensis*, Natuna Ids, p. 498, BONHOTE, Ann. Nat. Hist. (7) v; *melanocephala*, p. 71, *pyrrsonota*, p. 75, Siam, *anambæ*, p. 215, Anambas Ids, *tiomanensis*, p. 216, Tioman Id, MILLER, P. Washington Ac. ii : n. spp. & subsp.
- Xerus saturatus*, Ukamba, NEUMANN, Zool. Jahrb. Syst. xiii, p. 546, n. sp.
- Petaurista thomasi*, Borneo, HOSE, Ann. Nat. Hist. (7) v, p. 251; *lylei*, Siam, BONHOTE, P. Zool. Soc. London 1900, p. 192; *nitidula*, Natuna Ids, THOMAS, Nov. Zool. vii, p. 592 : n. spp.
- Sciuropterus thomsoni* and *hosei*, Borneo, THOMAS, Ann. Nat. Hist. (7) v, p. 275; *harrisoni*, Borneo, STONE, P. Ac. Philad. 1900, p. 462; *oregonensis stephensi*, California, MERRIAM, P. Soc. Washington xiii, p. 152; *yukonensis*, Alaska, OSGOOD, North Amer. Fauna, No. 19, p. 25; *sabrinus makkovikensis*, Labrador, SORNBORGER, Ottawa Natural. xiv, p. 48 : n. spp. & subsp.
- Eutamias caniceps*, Alaska, OSGOOD, North Amer. Fauna, No. 19, p. 28, n. sp.
- Spermophilus osgoodi*, p. 18, *barrowensis*, p. 19, *beringensis*, p. 20, MERRIAM, P. Washington Ac. xi; *empetra plesius*, OSGOOD, North Amer. Fauna, No. 19, p. 29 : n. spp. & subsp., Alaska.
- Arctomys marmotta*, hibernation, RINA & MONTI, Rend. Ist. Lombardo (2) xxxiii, p. 372, DUBOIS, Ann. Soc. Linn. Lyon (2) xlv, p. 102; renal epithelium during same, MONTI, Anat. Anz. xvii, p. 82.
- Castor fiber* in Prussia, DAHMS, Zool. Garten xli, p. 87.
- Submaxillary glands of *Gliridæ*, AUERBACH, Rev. Suisse Zool. viii, p. 45.
- Myoxus glis*, notes on, BÄCHLER, Ber. St. Gall. Ges. 1898-99, p. 267, HEMPEL, Ber. Ges. Chemnitz xxiv, p. 98.
- Muscardinus avellanarius anglicus*, Britain, B. HAMILTON, P. Zool. Soc. London 1900, p. 86, n. subsp.

## MURIDÆ.

- Gerbillus arenicolor*, E. Turkestan, MILLER, P. Soc. Washington xiii, p. 163, n. sp.
- Dendromys lorati*, Abyssinia, DE WINTON, P. Zool. Soc. London 1900, p. 82, pl. x, n. sp.

- Dasymys rufulus*, Liberia, MILLER, P. Washington Ac. ii, p. 638, n. sp.  
*Arvicanthus planifrons*, Liberia, MILLER, t. c. p. 641, n. sp.  
*Mus*, brain, HALLER, Morphol. Jahrb. xviii, p. 347: umbilical arteries.  
 HENNEBERG, Anat. Anz. xvii, p. 321: conjunctive tissue of testicle.  
 REGAUD, C.R. Soc. Biol. iii, p. 26: testicular and epididymal osteology.  
 F. MAJOR, in Andrews's Monograph of Christmas Island, p. 34:  
*fuscipes*, amended description, WAITE, Rec. Austral. Mus. iii, p. 190:  
*minutus*, its races, R. HAMILTON, Ann. Nat. Hist. 7, v, p. 527:  
*decumanus*, tarsus, BIGSOTTI, Monit. Zool. ital. xi, suppl. p. 17:  
*vociferans*, p. 138, *ferreorans*, p. 140, *validus*, p. 141, *crumecrander*,  
 p. 144, *asper*, p. 145, *pellax*, p. 147, *surifer*, p. 148, Siam, *vaciferans*  
*lancavenae*, p. 188, *surifer flavidulus*, p. 189, Palo Lankavi, *surifer*  
*butangensis*, *pannosus*, p. 190, Butang Ida, P. Soc. Washington  
 xiii, *flaviventer*, p. 204, *anambae*, p. 205, *strepitans*, p. 207, *mentanensis*,  
 p. 210, Anambas Ida, *lingensis*, p. 206, Linga Id, *mentanensis*, p. 208,  
*obscurus*, p. 213, Tioman Id, *tambelanus*, p. 212, Tambelan Id,  
*defusa*, p. 635, *tullbergi rostratus*, p. 637, Liberia, P. Washington  
 Ac. ii, MILLER; *sylvaticus celticus*, Ireland, p. 401, a. *evansoni*, Here-  
 ford, p. 406, a. *princeps*, Rumania, p. 408, a. *tauricus*, Asia Minor,  
 p. 412, a. *pallipes*, Turkestan, p. 417, a. *draco*, N.W. China, p. 418,  
 B. HAMILTON, P. Zool. Soc. London 1900; *goliath*, p. 165, *barbatus*,  
 p. 167, Madagascar, MILNE-EDWARDS, Bull. Mus. Paris 1900; *ciliatus*,  
 Malay Peninsula, BONHOTE, P. Soc. Zool. London 1900, p. 879, pl. lvi:  
 n. spp. & subsp.  
*Cricetus* has priority over *Hamster*, NEHRING, Zool. Anz. xxiii, p. 480;  
 number of mammae in this genus, *Cricetulus* and *Mesocricetus*, NEH-  
 RING, t. c. p. 572.  
*Mesocricetus kanigi*, Caucasus, NEHRING, t. c. p. 301, n. sp.  
*Hesperomys glirinus* and *lanatus*, No. 13 (1896), p. 19, *puerulus*, p. 20,  
*dolichonyx*, p. 21, *d. cinnamomea*, p. 22, Tarapaca, *athiope*\*, Santiago,  
 No. 14 (1900), p. 9, *capito*, Atacama, p. 10, *dumetorum*, Valdivia,  
*dichrous*, Santiago, p. 14, *megalotis*, Santiago, p. 15, *lepturus*, Santiago,  
*pellurus*, Colchagua, p. 17, *trichotis*, Santiago, p. 18, *eriguus*, Santiago,  
 p. 19, *foncki*, Llanquihue, p. 20, *mollis*, Santiago, p. 23, *chonetis*,  
 Chonos Id, *vincolis*, Santiago, p. 24, *commutatus*, Valdivia, p. 25,  
*landbecki*, Illapel, p. 26, *senilis*, Santiago, p. 27, *illapelinus*, p. 28,  
 Illapel, *simpsoni*, Patagonia, p. 29, *macrocerus*, Colchagua, *segethi*,  
 Santiago, p. 30, *nigriburba*, Talcalegue, p. 31, *germaini*, Santiago,  
*saltator*, Santiago, p. 32, *amblyrhynchus*, Valdivia, p. 36, *brachytarsus*,  
 Santiago, p. 37, *nanica*, S. America, *campestris*, Choapa, p. 38,  
*melanizon*, Chili, *melanotis*, S. America, p. 39, *ruyicaudus*, Chili,  
*macronychos*, Chili, p. 40, *infans*, Chili, *xanthopus*, Osorno, p. 41,  
*mocha*, Mocha Id, *pachycephalus*, St. of Magellan, p. 42, *diminutivus*,  
 Illapel, p. 43, *agilis*, Illapel, p. 44, *subrufus*, Chili, *fusco-ater*, S.  
 America, p. 45, *pencanus*, Concepcion, *araucanus*, Concepcion, p. 46,  
*platytarsus*, La Ligua, *pernix*, La Ligua, *leptodactylus*, Valparaíso,  
 p. 48, *memoralis*, Valdivia, *melampus*, Cartagena, p. 49, *saltum*,  
 Andes, p. 50, *glaphyrus*, Maule, *longibarbus*, Valdivia, p. 51, *coquin-*  
*bensis*, Coquimbo, p. 52, *cyaneus*, Constitucion, p. 53, *griseo-flavus*,  
 Coquimbo, p. 55, *peteroanus*, Peteroa, *osorninus*, Osorno, p. 56,  
*microtis*, Maule, *atratus*, Maule, p. 57, *dasyus*, S. America, *cau-*  
*quenensis*, Maule, p. 61, *melaeus*, Maule, PHILIPPI, An. Mus. Chile:  
 n. spp.  
*Rhipidomys venustus*, Merida, p. 152, *goodfellowi*, p. 270, Rio Napo,  
*venezuelae cumananus*, Cumana, *dryas*, Paramba, p. 271, THOMAS,

\* This and the following are described as *Mus*.



- Ann. Nat. Hist. (7) v; *macconnelli*, Brit. Guiana, DE WINTON, Tr. Linn. Soc. London (2) viii, p. 52 : n. sp. & subsp.
- Oligoryzomys*, n. subg. for *Oryzomys navus*, BANGS, P. New England Zool. Club i, p. 94.
- Erioryzomus*, n. subg. p. 96, for *Oryzomys monochromos*, Santa Marta, n. sp. p. 97, BANGS, t. c.
- Neacomys*, n. g. for *Oryzomys spinosus*, THOMAS, 1882, *N. spinosus tenuipes*, Bogota, n. subsp., THOMAS, Ann. Nat. Hist. (7) v, p. 153.
- Oryzomys sylvaticus*, p. 272, *balneator*, p. 273, Ecuador, *prator*, p. 354, Peru, THOMAS, t. c.; *keaysi* and *obtusirostris*, Peru, ALLEN, Bull. Amer. Mus. xiii, p. 226.
- Rhithrodontomys chrysopsis*, Mexico, MERRIAM, P. Soc. Washington xiii, p. 152, n. sp.
- Eligmodontia sorella*, Peru, THOMAS, Ann. Nat. Hist. (7) vi, p. 297, n. sp.
- Rhithrodon longicaudatus*, E. Patagonia, PHILIPPI, An. Mus. Chile, No. 14, p. 64, n. sp.
- Phyllotis gerbillus*, Peru, v, p. 151, *venustus*, Merida, p. 152, *amicus*, p. 355, *a. maritimus*, vi, p. 296, *a. montanus*, p. 297, *sublimis*, p. 467, Peru, THOMAS, Ann. Nat. Hist. (7) : n. spp. & subsp.
- Otomys irroratus orestes*, Mt Kenya, THOMAS, P. Zool. Soc. London 1900, p. 175, n. subsp.
- Akodon amoenus*, Peru, THOMAS, Ann. Nat. Hist. (7) vi, p. 468, n. sp.
- Oxymycterus inca*, THOMAS, t. c. p. 298; *juliaca*, p. 223, *apicalis*, p. 224, ALLEN, Bull. Amer. Mus. xiii: n. spp., Peru.
- Zygodontomys brevicauda tobagi*, Tobago, THOMAS, op. cit. v, p. 274, n. subsp.
- Neotoma saxamans*, Alaska, OSGOOD, North Amer. Fauna, No. 19, p. 33, n. sp.
- Fiber spatulatus*, Alaska, OSGOOD, t. c. p. 36, n. sp.
- Phenacomys celatus crassus*, Labrador, BANGS, P. New England Zool. Club ii, p. 39, n. subsp.
- Synaptomys innuitus medioximus*, Labrador, BANGS, t. c. p. 40, n. subsp.
- Microtus*, synopsis of American species, BAILEY, North Amer. Fauna, No. 17; *californicus constrictus*, p. 36, *scirpensis*, p. 38, *ludovicianus*, p. 74, Louisiana, BAILEY, t. c.; *innuitus*, p. 21, *yakutatensis*, *unalascensis popofensis*, p. 22, *abbreviatus fischeri*, p. 23, *macfarlandi*, p. 24, Alaska and Arctic America, MERRIAM, P. Washington Ac. ii; *lama*, W. Tibet, B. HAMILTON, P. Zool. Soc. London 1900, p. 196 : n. spp. & subsp.
- Crasseomys*, n. subg. for *Hypudæus rufocanus*, Sundevall, 1846, MILLER, P. Soc. Washington xiii, p. 87.
- Erotomys* distinct from †*Anaptogonia*, MILLER, t. c. p. 154.
- Erotomys orca*, Alaska, MERRIAM, p. 16, *norvegicus*, Norway, MILLER, p. 93, *vasconia*, Pyrenees, p. 96, *hercynicus helveticus*, Alps, p. 98, *h. suecicus*, Sweden, p. 101, *h. rubidus*, France, p. 102, *h. britannicus*, Britain, p. 103, P. Washington Ac. ii : n. spp. & subsp.
- Lemmus alascensis*, p. 26, *yukonensis*, p. 27, Alaska, MERRIAM, P. Washington Ac. ii, n. spp.
- Dicrostonyx hudsonius alascensis*, STONE, P. Ac. Philad. 1900, p. 37; *unalascensis* and *nelsoni*, p. 25, *richardsoni*, p. 26, MERRIAM, P. Washington Ac. ii, Alaska : n. spp. & subsp.
- Ascopharynx*, n. nom., WAITE, Ann. Nat. Hist. (7) v, p. 223 for *Thylacomys*, Waite, 1898, nec Blyth, 1840.

## SPALACIDÆ, HETEROMYIDÆ and BATHYERGIDÆ.

- Tachyoryctes splendens ibeanus*, B. East Africa, THOMAS, P. Zool. Soc. London 1900, p. 179, n. subsp.

- Spalax*, in North Africa, SORDELLI, Atti Soc. Ital. xxxviii, p. 357; in the Cyrenaica, NEHRING, SB. Ges. naturf. Berlin 1900, p. 210.  
*Perognathus panamintinus arenicolæ*, California, STEPHENS, P. Soc. Washington xiii, p. 153; *merriami gilvus*, W. Texas, p. 22, *apache melanotis*, Mexico, p. 27, *callistus*, Wyoming, p. 28, *paramintinus brevinasus*, California, p. 30, *amplus*, Arizona, p. 32, *parvus magruderensis*, Nevada, p. 38, *hispidus zacatecæ*, Mexico, p. 45, *penicillatus angustirostris*, Colorado, p. 47, *pernix rostratus*, Mexico, p. 51, *goldmani*, Mexico, p. 54, *artus*, W. Mexico, p. 55, *anthonyi*, California, p. 56, *californicus dispar*, California, p. 58, OSGOOD, North Amer. Fauna, No. 18 : n. spp. & subspp.  
*Georychus zechi*, Togo, MATSCHIE, SB. Ges. naturf. Berlin 1900, p. 146, n. sp.

# DIPODIDÆ.

- Alactaga suschkini*, Kirgiz steppe, SATUNIN, Zool. Anz. xxiii, p. 137, n. sp.; = *A. annulata*, M. Edw., NEHRING, Zool. Anz. xxiii, pp. 139 & 201.  
*Alactaga*, characters of species, NEHRING, t. c. pp. 201 & 263, and SB. Ges. naturf. Berlin 1900, p. 61.  
*Dipus deasyi*, Chinese Turkestan, B. HAMILTON, P. Zool. Soc. London 1900, p. 196, n. sp.  
*Pygeretmus* (= *Platysercomys*) *platyurus*, development of skull, dentition, and tail, NEHRING, Zool. Anz. xxiii, p. 361.  
*Zapus*, synopsis, ALLEN, Amer. Natural. xxxiv, p. 199.

# ERETHIZONTIDÆ and OCTODONTIDÆ.

- Erethizon epixanthus myops*, Alaska, MERRIAM, P. Washington Ac. ii, p. 27; *dorsatus picinus*, Labrador, BANGS, P. New England Zool. Club ii, p. 37 : n. subspp.; *dorsatus*, integument, LOWE, Jena. Zeitschr. xxxiv, p. 833.  
*Proechimys rosa*, Ecuador, v, p. 219, *centralis panamensis*, and *c. chiriquinus*, Panama, p. 220, *simonsi*, Peru, vi, p. 300, THOMAS, Ann. Nat. Hist. (7) : n. spp. & subspp.  
*Dactylomys peruanus*, Peru, ALLEN, Bull. Amer. Mus. xiii, p. 220, n. sp.  
*Lagidium lutescens*, Tarapaca, PHILIPPI, An. Mus. Chile, No. 13, p. 18 (1896), n. sp.  
*Vizcacia vizcacia* (Brandis, 1786) supersedes *Lagostomus trichodactylus*, Brookes, 1828, ALLEN, P. Soc. Washington xiii, p. 183.  
*Ctenomys robustus*, p. 11, *pallidus*, p. 13, *pernix*, p. 15, *chilensis*, p. 16, Tarapaca, PHILIPPI, An. Mus. Chile, No. 13 (1896); *pundti*, Argentina, p. 420, *neglectus*, Patagonia, p. 535, NEHRING, Zool. Anz. xxiii; *tucumanus*, Tucuman, p. 322, *opimus nigriceps*, Tetiri, p. 383, *o. luteolus*, Argentina, p. 384, *dorsalis*, Paraguay, p. 385, THOMAS, Ann. Nat. Hist. (7) vi : n. spp. & subsp.; *nattereri* and *lujanensis*, note on, NEHRING, op. cit. pp. 537 & 540; skulls of various species, NEHRING, SB. Ges. naturf. Berlin 1900, p. 201.

# CAVIIDÆ.

- Cavia aperea*, liver, NATTAN-LARRIER, CR. Soc. Biol. lii, p. 881; evolution of lymphatic glands, RETTERER, CR. Soc. Biol. lii, p. 334.

## LEPORIDÆ.

- Lepus alleni palitans*, Mexico, BANGS, P. New England Zool. Club i, p. 85; *othus*, p. 28, *podadromus*, *americanus dalli*, p. 29, *a. macfarlani*, Alaska and Arctic America, MERRIAM, P. Washington Ac. ii; *saliens*, Alaska, OSGOOD, North Amer. Fauna, No. 19, p. 39; *timidus lutescens*, Ireland, p. 89, *t. ainu*, Japan, p. 90, B. HAMILTON, P. Zool. Soc. London, 1900; *sylvaticus*, abnormality in circulatory system, SLONAKER, Amer. Natural. xxxiv, p. 639; *cuniculus*, ovary, HONORÉ, Arch. Biol. xvi, p. 537, placenta, MAXIMOW, Arch. mikr. Anat. lvi, p. 699; corpuscles, WINIWARTER, Arch. Biol. xvi, p. 685, and ovary, xvii, p. 33.
- Sylvilagus orinoci*, Peru, THOMAS, Ann. Nat. Hist. (7) v, p. 356, n. sp.
- Brachylagus*, n. subg. for *Lepus idahoensis*, Merriam, 1891, MILLER, P. Soc. Washington xiii, p. 157.
- Caprolagus furnessi*, Liu Kiu Ids., STONE, P. Ac. Philad. 1900, p. 460, n. sp.

## INCERTÆ SEDIS.

- †*Anomalomys*, n. g. for *A. gaudryi*, n. sp., Miocene, Grive St Alban, France, GAILLARD, C.R. Ac. Paris cxxx, p. 191.

## VI. UNGULATA.

- Pneumaticity of skull and morphology of ethmoid, PAULLI, Morphol. Jahrb. xxviii, p. 179; brain, HOLL, Arch. Anat. 1900, p. 253, SCHELLENBERG, Jena. Zeitschr. xxxiv, p. 113.

## ARTIODACTYLA.

- Relations and characters of extinct types, PAVLOW, Bull. Soc. Moscou 1899, p. 1.

## BOVIDÆ.

- Colour-markings of Antelopes, Pocock, Nature lxii, p. 584.
- Bos taurus tprimigenius*, horn from peat of Pomerania, NEHRING, SB. Ges. naturf. Berlin 1900, p. 1; ancient Roman statuettes of this species and *priscus* (or *bonasus*), FRAAS, Fundberichte aus Schwaben vii, p. 37; *t. typicus*, white breeds, WALLACE, Tr. Soc. Glasgow (2) v, p. 403; *gaurus* and *frontalis*, S. BAKER, Asian, Feb. 20 and 27, pp. 528 & 556; *bison*, number surviving, SULLIVAN, Boston Evening Transcript, Oct. 10, p. 11; *tpriscus* from Bosnia, GRIMMER, Mt. Bosnien Hercegovina vi, p. 847.
- Ovibos moschatus*, anatomy, LÖNNBERG, P. Zool. Soc. London 1900, pp. 142 & 686; note on, KOBELT, Ber. Senckenberg. Ges. 1900, p. 61, pl. vii; acclimatisation, MEWIUS, Zool. Garten xli, p. 332; *m. wardi*, E. Greenland, LYDEKKER, Nature lxiii, p. 157, and P. Zool. Soc. London 1900, p. 830, n. subsp.
- Ovis sairensis*, figured, LYDEKKER, P. Zool. Soc. London 1900, p. 114; *ammon*, hunting, DEMIDOFF (53); distribution of wild species, GREVÉ, KB. Ver. Riga xliii, p. 131; *aries*, brain, ZIEHEN, Anat. Anz. xvii, p. 237.

- Capra sibirica*, hunting, DEMIDOFF (53); *sibirica*, var., LYDEKKER, P. Zool. Soc. London 1900, p. 114 = *sibirica lydekkeri*, Altai, ROTHSCILD, Nov. Zool. vii, p. 277, pl. ii; *s. wardi*, Baltistan, LYDEKKER, Game of India, etc., p. 101; n. subsp.
- Oreamnus kennedyi*, Alaska, ELLIOT, Field Mus. Zool. iii, p. 1, n. sp.
- Nemorhædus swettenhami*, Malay Peninsula, BUTLER, P. Zool. Soc. London 1900, p. 675, n. sp.
- Connochates taurinus*, young figured, SCLATER, P. Zool. Soc. London 1900, pl. xlviii.
- Madoqua guentheri smithi*, N.E. Africa, THOMAS, P. Zool. Soc. London 1900, p. 804, n. subsp.
- Pediotragus horstacki*, p. 39, n. nom. for *Rhaphiceros campestris*, Auct (? nec Thunberg), *kelleni*, n. sp. p. 41, Cuneni River, JENTINK, Notes Leyden Mus. xxi.
- Cobus maria* and other Nile Antelopes, note on, THOMAS, P. Zool. Soc. London 1900, p. 84.
- Adenota mengesi*, Somaliland, NEUMANN, Zool. Jahrb. Syst. xiii, p. 560, n. sp.
- Cervicapra redunca wardi*, East Africa, THOMAS, Ann. Nat. Hist. (7) vi, p. 304, n. subsp., for *C. bohor*, Thomas & Sclater, nec Rüppell, *thomasiæ*, Nyasaland, SCLATER, P. Zool. Soc. London 1900, p. 429, pl. xxvi, n. sp.
- Gazella subgutturosa sairensis*, Sair Mts. Altai, LYDEKKER, Game of India, etc., p. 184; *granti brighti*, N. E. Africa, THOMAS, P. Zool. Soc. London 1900, p. 805 : n. subsp.
- Limnotragus*, n. nom. for *Hydrotragus*, Gray, 1872, nec Fitzinger, 1869, SCLATER & THOMAS, Book of Antelopes, p. 149, type *Tragelaphus spekei*, Sclater.
- Tragelaphus scriptus ornatus*, Chobi river, p. 94, *fasciatus*, Webbe river, *delamerei*, Somaliland, p. 95, Pocock, Ann. Nat. Hist. (7) v, n. subsp.

#### CERVIDÆ.

- Origin of antlers, CUNNINGHAM, Sexual Dimorphism (51), p. 73; notes on, RÖRIG, Zool. Garten xli, p. 367.
- Rangifer montanus*, Alaska, p. 129 (1899), *dawsoni*, Queen Charlotte's Ids, p. 257, S. THOMPSON, Ottawa Natural. xiii, n. spp.
- Alces machlis*, fossil in Bosnia, GRIMMER, Mt. Bosnien Hercegovina vi, p. 845.
- Cervus elaphus*, abnormal antler, MATIEGKA, SB. Bomisch. Ges. 1899, art. 41; in Crimea, BRAUNER, Zapiski Novoross. Obshch. 1900, p. 1, pl. i; fossil in Italy, TUCCIMEI, Atti Acc. Pont. Lincei ix, p. 65; *bactrianus*, v, p. 196, Turkestan, *tavistocki*, vi, p. 205, (?) Philippinea, LYDEKKER, Ann. Nat. Hist. (7), n. spp.
- Capreolus caprea*, development of antlers, with figg. of those of same individual during ten consecutive years, HENNICKE, Zool. Garten xli, p. 379, pl. iii.
- Mazama bisulca*, synonymy, BERG, Comun. Mus. Buenos Aires i, p. 261; *antisensis*, *chilensis* (= *bisulcus*), *brachyceros*, description of, PHILIPPI, Ann. Mus. Chile 1892 & 1894 (see p. 14, Nos. 234 & 236).

#### TRAGULIDÆ and CAMELIDÆ.

- Tragulus rufulus*, Tioman Id., P. Washington Ac. ii, p. 227, *umbrinus*, Pulo Lankawi, MILLER, P. Soc. Washington xiii, p. 191, n. spp.
- Lama huanacus*, synonymy, BERG, Comun. Mus. Buenos Aires i, p. 260.

## SUIDÆ.

Dentition, osteology, phylogeny, and distribution, STEHLIN, Abh. Schweiz. pal. Ges. xxvii, p. 337.

*Sus scrofa*, allantois, MINOT, Anat. Anz. xviii, p. 127; *tgiganteus*, *ttitan*, *thysudricus*, and certain other fossil species referred by STEHLIN, Abh. Schweiz. pal. Ges. xxvii, to *Potamochoerus*.

## PERISSODACTYLA.

*Equus penricei*, Angola, THOMAS, Ann. Nat. Hist. (7) vi, p. 465, n. sp.; = *E. hartmannæ*, MATSCHIE, SB. Ges. naturf. Berlin 1900, p. 231.

†*Onohippidium*, skin, LÖNNBERG, P. Zool. Soc. London 1900, p. 379.

†*Hipparion* not the ancestor of *Equus*, BOULE, Bull. Soc. geol. France xxvii, p. 542.

*Tapirus*, dentition, GHIGLI, Anat. Anz. xvii, suppl. p. 17.

Phylogeny and classification of Old World *Rhinocerotida*, OSBORN, Bull. Amer. Mus. xiii, p. 229; fossil specimens in Leiden Museum, REICHENBACH, Samml. Geol. Mus. Leiden (2) ii, art. 2.

†*Diceratherium douvillei*, L. Miocene, France, OSBORN, Bull. Amer. Mus. xiii, p. 239, n. sp.

†*Aceratherium filholi*, phosphorites, France, OSBORN, t. c. p. 240, n. sp.

*Rhinoceros tantiquitatis* from Bohemia, ZELIZKO, Verh. geol. Reichsanst. 1900, p. 345; *simus* in East Central Africa, THOMAS, Nature lxi, p. 599; †*Atelodus neumayri*, Pliocene, Greece, or Persia, OSBORN, Bull. Amer. Mus. xiii, p. 263, n. sp.

†*Trigonias*, n. g. for *T. osborni*, n. sp., Miocene, Dakota, LUCAS, P. U. S. Mus. xiii, p. 221.

## HYRACOIDEA.

*Procavia mackinderi* and *jacksoni*, p. 176, *crawshayi*, p. 178, Brit. E. Africa, THOMAS, P. Zool. Soc. London 1900; *matschiei*, E. Africa, NEUMANN, Zool. Jahrb. Syst. xiii, p. 555 : n. spp.

## PROBOSCIDEA.

Elephants in Paris Menagerie, MILNE-EDWARDS, Bull. Mus. Paris 1899, p. 404; *Elephas indicus* in Ceylon, DE VOS, J. Ceylon Asiat. Soc. xv, p. 176 (1899); †*Mastodon* and *Elephas* in Spain, ALMERA, Bol. Ac. Barcelona (3) i, p. 535.

*Elephas cyclotis*, Cameruns, p. 194, *oxyotis*, Sudan, p. 196, *knochenhaueri*, German E. Africa, p. 197, MATSCHIE, SB. Ges. naturf. Berlin 1900, n. spp.; Cuvier's name, *E. capensis*, is adopted for the South African elephant; *africanus*, incisors, COCCHI, Boll. Soc. geol. Ital. xix, p. 26; †*tantiquus*, prehistoric hunting, MÖLLER, Zeitschr. Naturw. lxxiii, p. 41.

## UNGULATA INCERTÆ SEDIS.

†*Archæoplus*, n. g. for *A. incipiens*, n. sp. fossil, Patagonia, AMEGHINO, Sinopsis geol.-pal. in Segundo Censo Nacional\* i, p. 174 (1898); figured, Comun. Mus. Buenos Aires i, p. 200.

†*Lamdaconus suinus*, note on, ROTH, Amer. J. Sci. (4) ix, p. 266.

---

\* See note on p. 36.

## VII. CETACEA.

- Of Scotland, TAYLOR, Ann. Scott. Nat. Hist. 1900, p. 66; fossil of San Marino, CAPELLINI, Rend. Acc. Lincei (5) ix, p. 233; and of Sardinia, Mem. Ist. Bologna (5) vii, p. 664; fossil of Calabria, STEFANO, Boll. Soc. geol. Ital. xix, p. 281; temperature, GULDBERG, Nyt Mag. Naturv. xxxviii, p. 65; Irish, SCHARFF, Irish Natural. ix, p. 83; Whaling, SOUTHWELL, Zoologist (4) iv, p. 65.
- Megaptera boops*, note on, VANHÖFFEN, Zool. Anz. xxiii, p. 114.
- Balenoptera musculus* at Dievenow, HENKING, Zool. Anz. xxiii, p. 574.
- †*Aulocetus calaritanus*, and *lovisati*, Miocene, Cagliari, Sardinia, CAPELLINI, Mem. Ist. Bologna (5) vii, p. 664, n. spp.
- †*Heterocetus major*, Tertiary, Calabria, STEFANO, Boll. Soc. geol. Ital. xix, p. 293, n. sp.
- †*Orca semseyi*, Miocene, Hungary, BÖCKH, Mt. Ungar. geol. Anstalt xiii, p. 105, n. sp.
- Delphinus delphis mediterranea* at Algarve, NOBRE, Ann. Sci. Nat. Porto vi, p. 50.
- Delphinus amphitriteus*, 1893, p. 7, *chilensis*, 1896, No. 12, p. 10, S. America, PHILIPPI, Ann. Mus. Chile (vide supra, p. 14, Nos. 233 & 235), n. spp.
- Phocæna albiventris*, p. 8, *philippii* and *pondonia*, p. 9, *dorbignyi*, p. 10, *obtusata*, p. 12, S. America, PHILIPPI, op. cit. 1893, n. spp.
- Tursio panope*, p. 14, *platyrhinus*, p. 16, S. America, PHILIPPI, op. cit. 1896, n. spp.
- Phocæna communis*, anatomy of head, RAWITZ, Int. J. Anat. xvii, p. 245.
- †*Campodelphis* in Italian Miocene, PAOLO, Atti Soc. Veneto-Trent. (2) iii, p. 323.
- †*Squalodon bariensis bellunensis*, Miocene, Belluno, Italy, PIAZ, Palæontogr. ital. vi, p. 313, n. subsp.
- †*Zeuglodon* (= *Basilosaurus*) *cetoides*, pelvis and femur, P. U. S. Mus. xxiii, p. 327, brain and dentition, Science (2) xii, p. 809, LUCAS.
- †*Dorudon*, diphyodont dentition in, LUCAS, Science, loc. cit.

## VIII. EDENTATA and EFFODIENTIA.

- Myology of hind limb, WINDLE & PARSONS, P. Anat. Soc. Gt. Brit. 1899, p. v.
- †*Grypotherium listai*, description of, A. S. WOODWARD, P. Zool. Soc. London 1900, p. 64; NORDENSKIÖLD, Svenska Ak. Handl. xxxiii, No. 3; *G. domesticum* distinct from *Neomylodon listai*, HAUTHAL, Comun. Mus. Buenos Aires i, p. 241.
- Falcifer*, n. g. for *Myrmecophaga jubata*, Linn., REHN, Amer. Natural. xxiv, p. 576; the type of *Myrmecophaga* being *M. tetradactyla*.
- Cyclopes didactylus ida*, Ecuador, THOMAS, Ann. Nat. Hist. (7) vi, p. 302, n. subsp.
- Orycteropus haussanus*, Togo, MATSCHIE, SB. Ges. naturf. Berlin 1900, p. 102, n. sp.

## IX. MARSUPIALIA.

- Shoulder-girdle, BROWN, Tr. R. Soc. Edinb. xxxix, p. 749; embryology and urino-genital organs, HILL, P. Linn. Soc. N. S. Wales xxv, p. 519.
- Macropus bedfordi*, Queensland or N. Australia (?), p. 112, *robustus cervinus*, W. Australia, THOMAS, P. Zool. Soc. London 1900, n. sp. and subsp.

- + *Diprotodon australis*, foot, DOLLO, Bull. Sci. France Belgique xxxii, p. 27<sup>a</sup>.
- Phascogale*, thymus, STIMINGTON, J. Anat. Physiol. norm. path. xxxiv, p. 226.
- + *Wynyardia*, n. g. for *W. bassiana*, n. sp., Tertiary, Tasmania, SPENCER, P. Zool. Soc. London 1900, p. 776, pls. xlix & l.
- Myrmecobius*, female urino-genital organs, HILL, P. Linn. Soc. N. S. Wales xxv, p. 519.
- + *Zygolestes*, n. g. for *Z. paranensis*, n. sp., Tertiary, Parana, AMEGHINO, Sinopsis geol.-pal. in Segundo Censo Nacional\* i, p. 243 (1896); figured, An. Soc. Argent. xlix, p. 238 (an ally of *Carnolestes*).
- Sarigwa*, Muirhead, stands for the large opossums instead of *Didelphys* (= *Metachirus*), which is typified by *D. opossum*, REHN, Amer. Natural. xxxiv, p. 577.
- Didelphys*, development of auditory ossicles, WEIL, Ann. N. York Ac. xii, p. 103; *pernigra*, Peru, p. 191, *carcinophaga cauca*, p. 192, *c. colombica*, p. 193, Colombia, ALLEN, Bull. Amer. Mus. xiii, n. sp. and subsp.
- Metachirus fuscogriseus*, Central America, p. 194, *tschudii*, Peru, p. 195, *nudicaudatus colombianus*, Colombia, p. 196, ALLEN, t. c., n. spp. and subsp.
- Marmosa cauca*, Colombia, THOMAS, Ann. Nat. Hist. (7) v, p. 221; *chapmani*, Trinidad, p. 197, *hagesi*, Venezuela, p. 198, ALLEN, Bull. Amer. Mus. xiii, n. spp.
- Thylamys keaysi*, Peru, ALLEN, op. cit. p. 198, n. sp.
- + *Proteodidelphys*, n. g. for *P. precursor*, n. sp. Fossil, Patagonia, AMEGHINO, Sinopsis geol.-pal. in Segundo Censo Nacional\* i, p. 187 (1896); figured, Comun. Mus. Buenos Aires i, p. 201.

## X. MONOTREMATA.

- Skull, SIXTA, Zool. Anz. xxiii, p. 213; VAN BEMMELEN, Zool. Anz. xxiii, p. 449, and P. Ak. Amsterdam iii, pp. 130 & 405; dermal glands, EGGELING, Anat. Anz. xvii, suppl. p. 42; carpus and tarsus, EMERY, Verh. Ges. München lxxi, p. 222; muzzle of foetus, WILSON, P. Linn. Soc. N. S. Wales xxv, p. 58; laryngeal cartilages, STIMINGTON, J. Anat. Physiol. norm. path. xxxiv, p. 90.
- Echidna*, brain, HALLER, Morphol. Jahrb. xxviii, p. 347.

---

\* The Recorder has not seen this work, quoted above, xxxv Mamm. p. 8, and xxxvi Mamm. p. 3, with "Secundo" instead of "Segundo."

# III. AVES.

BY

R. BOWDLER SHARPE, LL.D., &c.

## CONTENTS.

	Page		Page
I. TITLES . . . . .	2	Passeriformes ( <i>continued</i> ).	
II. SUBJECT INDEX.		Tyrannidæ . . . . .	48
Faunistic . . . . .	32	Pipridæ . . . . .	48
Anatomy & Miscellaneous . . . . .	32	Cotingidæ . . . . .	49
III. SYSTEMATIC—		Pittidæ . . . . .	49
Saururæ.		Atrichornithidæ . . . . .	49
Archæopteryges . . . . .	33	Hirundinidæ . . . . .	49
Odontornithiformes . . . . .	33	Muscicapidæ . . . . .	49
Ratitæ.		Campophagidæ . . . . .	51
Struthioniformes . . . . .	33	Pycnonotidæ . . . . .	51
Casuariiformes . . . . .	33	Timeliidæ . . . . .	51
Dinornithiformes . . . . .	34	Mimidæ . . . . .	52
Æpyornithiformes . . . . .	34	Troglodytidæ . . . . .	52
Carinata.		Cinclidæ . . . . .	53
Tinamiformes . . . . .	34	Turdidæ . . . . .	53
Galliformes . . . . .	34	Sylviidæ . . . . .	54
Turniciformes . . . . .	35	Artamidæ . . . . .	55
Pteroclidiformes . . . . .	35	Vireonidæ . . . . .	55
Columbiformes . . . . .	35	Prionopidæ . . . . .	55
Ralliformes . . . . .	36	Laniidæ . . . . .	55
Colymbiformes . . . . .	36	Sittidæ . . . . .	56
Sphenisciformes . . . . .	36	Paridæ . . . . .	56
Procellariiformes . . . . .	36	Zosteropidæ . . . . .	57
Alciformes . . . . .	37	Dicæidæ . . . . .	57
Lariformes . . . . .	37	Nectariniidæ . . . . .	57
Charadriiformes . . . . .	37	Meliphagidæ . . . . .	58
Gruiformes . . . . .	38	Certhiindæ . . . . .	58
Ardeiformes . . . . .	39	Mniotiltidæ . . . . .	59
Phœnicopteriformes . . . . .	39	Motacillidæ . . . . .	59
Anseriformes . . . . .	39	Alaudidæ . . . . .	59
Pelecaniformes . . . . .	40	Fringillidæ . . . . .	60
Accipitriformes . . . . .	40	Drepanidæ . . . . .	61
Strigiformes . . . . .	41	Cærebidæ . . . . .	61
Psittaciformes . . . . .	42	Tanagridæ . . . . .	61
Coraciiformes . . . . .	43	Ploceidæ . . . . .	61
Trogonæ . . . . .	45	Icteridæ . . . . .	62
Coccyges . . . . .	45	Oriolidæ . . . . .	62
Scansores . . . . .	46	Dicruridæ . . . . .	63
Piciformes . . . . .	46	Eulabetidæ . . . . .	63
Passeriformes.		Sturnidæ . . . . .	63
Pteroptochidæ . . . . .	47	Paradisæidæ . . . . .	63
Formicariidæ . . . . .	47	Corvidæ . . . . .	63
Dendrocolaptidæ . . . . .	48		



## INTRODUCTION.

PERHAPS the principal feature of the year 1900 as regards Ornithology is the marked increase in the number of new species described from Africa, but there are no works or Memoirs worthy of special notice beyond their fellows. In fact 1900 may be reckoned an ordinary year of steady progress, in which some very good work has been done. The writer has again to acknowledge the assistance he has received from Mr Charles Chubb in the compilation of this Record.

## TITLES\*.

1. AIKEN, C. E. Seven new birds for Colorado. *Auk* xvii, p. 298. [*Colymbiformes*, *Ardeiformes*, *Strigiformes*, *Mniotiltidæ*.]
2. ALBERT, F. Estudios sobre la Ornitología Chilena. *Revist. chilena* iv, p. 7, Lam. i. [*Ardeiformes*.]
3. ALEXANDER, B. An Ornithological Expedition to the Zambesi River. *Ibis* 1900, pp. 70-109, 424-458. [*Galliformes*, *Charadriiformes*, *Lariiformes*, *Accipitriformes*, *Psittaci*, *Meropæ*, *Indicatoræ*, *Bucerotes*, *Sylviidae*, *Timeliidae*, *Pycnonotidae*, *Turdidae*, *Muscicapidae*.]
4. ALLEN, J. A. The Little Black Rail. *Auk* xvii, pp. 1-8, pl. i. [*Ralliformes*.]
5. —. Aptosochromatism. *T. c.* pp. 327-336.
6. —. North American birds collected at Santa Marta, Colombia. *T. c.* pp. 363-367. [*Ardeiformes*, *Charadriiformes*, *Cuculi*, *Icteridae*, *Mniotiltidae*.]
7. —. List of birds collected in the district of Santa Marta, Colombia. *Bull. Amer. Mus.* xiii, pp. 117-184. [*Galliformes*, *Tyrannidae*, *Formicariidae*, *Cotingidae*, *Rhamphastides*, *Tanagridæ*, *Vireonidae*, *Mniotiltidae*, *Trochili*.]
8. ALTUM, B. Obituary. [By SCHALOW, H.] *Ornith. Monber.* viii, pp. 49-54.
9. ANDERSEN, K. Meddelelser om Færøernes Fugle med særligt Hensyn til Nolsø. 3dje Række. Efter skriftlige Oplysninger fra P. F. Petersen, Nolsø. *Vid. Medd.* 1900, pp. 113-132.
10. ANDERSON, M. L. Bird-notes from Lea, near Gainsborough: January to June 1899. *Naturalist* 1900, pp. 157-160.
11. [ANONYMOUS.] The Birds of the Bristol District. *Pr. Bristol Soc.* (2) ix, pp. 84-98.
12. ANTHONY, A. W. Notes on the genus *Micruria*. *Auk* xvii, pp. 168 & 169. [*Pelecaniformes*.]
13. —. Nesting habits of the Pacific Coast species of the genus *Puffinus*. *T. c.* pp. 247-252, pl. viii. [*Procellariiformes*.]

---

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

14. APLIN, O. V. Notes on the Ornithology of Oxfordshire. *Zoologist* 1900, pp. 12-28.
15. —. The birds of Lley, West Carnarvonshire. T. c. pp. 489-505.
16. ARRIGONI DEGLI ODDI, E. On the occurrence of Nordmann's Pratincole (*Glareola melanoptera*) in Italy. *Ibis* 1900, pp. 60-62. [*Charadriiformes*.]
17. —. Note Bibliografiche. *Atti Ist. Veneto* lix, pp. 651-661.  
 —. Notes upon the zoological meeting of Pavia. *Zoologist* 1900, pp. .  
 —. Note Ornitologiche sul Museo Nazionale di Zagabria. *Boll. Soc. zool. Ital.* (2) i, pp. 69-81.
18. —. Note ornitologiche sulla Provincia di Verona. *Atti Soc. Ital.* xxxviii, pp. 75-190.
19. —. Relazione sulla Riunione Ornitologica di Sarajevo (25-28 Settembre 1899). *Ornis* x, pp. 175-182.
20. BAGG, E. Bird News from Central New York. *Auk* xvii, pp. 177 & 178.
21. BAKER, E. C. STUART. Indian Ducks and their allies. Part ix. with pl. ix. *J. Bombay Soc.* xiii, pp. 1-24: Part x. with pl. x, pp. 199-222. [*Anseriformes*.]
22. BALLOWITZ, E. Die grosse Raubseeschwalbe (*Sterna caspia* Pall.) an der pommerschen Ostseeküste. *J. Ornith.* 1900, pp. 165-175. [*Lariiformes*.]
23. BANGS, O. A review of the Three-toed Woodpeckers of North America. *Auk* xvii, pp. 126-142. [*Pici*.]
24. —. Notes on a collection of Bahama birds. T. c. pp. 283-293. [*Strigiformes*, *Mniotiltidae*.]
25. —. Occurrence of the Little Blue Heron in Labrador (*Ardeiformes*). T. c. p. 386.
26. BARBOZA DU BOCAGE, J. V. Aves do Archipelago de Cabo Verde. *J. Sci. Lisb.* (2) vi, No. xxi, pp. 39-47.
27. BARLOW, C. Some additions to Van Denburgh's list of land birds of Santa Clara Co., Cal. *The Condor* ii, pp. 131-133.
28. BARRETT-HAMILTON, G. E. H. Notes on the Birds observed during three visits to Kamchatka in 1896 and 1897. *Ibis* 1900, pp. 271-298.
29. BAU, A. Ornithologisches aus Vorarlberg. *Ornith. Jahrb.* xi, pp. 121-131.
30. BEAL, F. E. L. Food of the Bobolink, Blackbirds and Grackles. *Bull. U. S. Dep. Agric. Biol.* No. 13, pp. 1-76. [*Icteridae*.]
31. BENSON, C. W. Birds on the Rigi. *Zoologist* 1900, pp. 268 & 269.
32. BEREZOWSKI, M. & BIANCHI, V. Description of two new birds from Western China. *Annuaire Mus. St. Petersb.* v, pp. 210-212. [*Sylviidae*.]
33. BERG, F. VON. Ornithologische Beobachtungen aus Elsass-Lothringen für 1898. *Ornis* x, pp. 159-174.
34. BERGE, R. Ornithologische Vorkommnisse aus dem westlichen Sachsen. *J. Ornith.* 1900, pp. 175-181.

35. [BERGE, R.] Frühere Brutvögel im Königreich Sachsen. T. c. pp. 235-241.
36. —. Insektenfang eines Turmfalken. Ornith. Monber. viii, pp. 37 & 38. [*Accipitriformes*.]
37. BERNARD, P. Un trait de mœurs de l'Hirondelle de Cheminées (*Hirundo rustica* L.). Ornith. x, p. 50. [*Hirundinidæ*.]
38. BERRY, W. A few notes on the working of the Wild Birds Protection Act (1894). Ann. Scott. Nat. Hist. 1900, pp. 1-7.
39. \*BEYER, G. E. The Avifauna of Louisiana. New Orleans, 1900, 45 pp.
40. —. An interesting Hybrid between a Mallard (*Anas boschas*) and Pin-tail (*Dafla acuta*). Auk xvii, pp. 170 & 171. [*Anseriformes*.]
41. —. The Ivory-billed Woodpecker in Louisiana. T. c. pp. 97-99. [*Pici*.]
42. BIANCHI, V. & ZARUDNY, N. On a new species of Stone-chat (*Saxicola semenovi*) from Eastern Persia. Annuaire Mus. St. Petersb. v, pp. 187-189. [*Turdidæ*.]  
— [See also BEREZOWSKI, M. C.]
43. BIDWELL, E. Curlew breeding in Surrey. Bull. B. O. C. xi, p. 34.
44. BINGHAM, C. T. On a new genus and species of Bulbul and an apparently new species of *Cyornis*. Ann. Nat. Hist. (7) v, pp. 357-359. [*Pycnonotidæ*, *Muscicapidæ*.]
45. — & THOMPSON, H. N. On the birds collected and observed in the Southern Shan States of Upper Burma. J. Asiat. Soc. Bengal lxi, Part ii, pp. 102-142.
46. BISHOP, L. B. Descriptions of three new birds from Alaska. Auk xvii, pp. 113-120. [*Tyrannidæ*, *Galliformes*.]
47. —. Birds of the Yukon Region with notes on other species. North Amer. Fauna No. 19 Bull. U. S. Dep. Agric. Biol. pp. 47-100. [*Accipitriformes*.]
48. BLAAUW, F. E. The colour of the soft parts in Ross's Snow Goose (*Chen rossii*). Ibis 1900, pp. 399 & 400. [*Anseriformes*.]
49. BLASIUS, R. Vogelleben an den Deutschen Leuchtthürmen 1895, 1896, 1897, 1898, und 1899. Ornith. x, pp. 293-476.
50. BLATHWAYT, F. L. A visit to Lundy. Zoologist 1900, pp. 375-380. [*Pelecaniformes*.]  
BOCAGE, J. V. BARBOZA DU. [See BARBOZA DU BOCAGE (27).]
51. BOLAM, G. Ornithological notes. Hist. Berwick. Club xviii, pp. 89-108.
52. BOND, F. A nuptial performance of the Sage Cock. Auk xvii, pp. 325-327, pl. xii.
53. BONHOTE, J. L. On the moult and colour changes of the Corncrake (*Crex pratensis*). Zoologist 1900, pp. 29-31. [*Ralliformes*.]
54. —. On moult and colour-change in birds. Ibis 1900, pp. 464-474.
- 54A. —. The Bearded Reedling. Avicult. Mag. vi, pp. 213-216, pl. iii. [*Panuridæ*.]
55. [BRACKETT, F. H.] Obituary. Auk xvii, p. 197.

56. BRAISLIN, W. C. Notes on Birds of Long Island. Auk xvii, pp. 69-71.
57. BRAUN, F. Bewerbung und Fortpflanzung. J. Ornith. 1900, pp. 181-185.
58. —. Noch einmal der Vogelzug. T. c. pp. 229-234.
59. —. Zur Ornith. des Danziger Weichbildes. Ornith. Monber. viii, pp. 6-12.
60. —. Zur Färbung der deutschen Sperlingsvögel. T. c. pp. 33-37, 95 & 96.
61. —. Aus dem Danziger Gau. T. c. pp. 66 & 67.
62. —. Feindschaft und Freundschaft unter der Sperlingsvögeln. T. c. pp. 82-85.
63. —. Die Deutschen Meisen. Ein Versuch logischer Naturbeschreibung. T. c. pp. 130-135. [*Paridae*.]
64. BREWSTER, W. Notes on the habits of the American Golden-eyed Duck or Whistler (*Clangula clangula americana*). Auk xvii, pp. 207-216, pls. vi & vii. [*Anseriformes*.]
65. BROGDEN, T. J. H. Birds of Spalding and the South Lincolnshire Fenland. Naturalist 1900, pp. 17-31.
66. BROOKS, A. Notes on some of the Birds of British Columbia. Auk xvii, pp. 104-107.
67. [BROOKS, W. E.] Obituary. T. c. p. 194.
68. BROWN, E. Ducks and Duck-breeding. J. Board Agric. London vii, pp. 300-310. [*Anseriformes*.]
69. BROWN, H. The conditions governing bird life in Arizona. Auk xvii, pp. 31-34.
70. [BROWNE, F. C.] Obituary. Auk xvii, pp. 194-196.
71. BRYANT, C. H. Black Redstart (*Ruticilla titys*) at Brighton in December. Zoologist 1900, p. 37. [*Turdidae*.]
72. BUCKLEY, T. E. Smew and White-fronted Goose in Shetland. Ann. Scott. Nat. Hist. 1900, p. 50. [*Anseriformes*.]
73. BUCKNILL, J. A. The Birds of Surrey. London, 1900, 8vo. LVI, 374 with map and illustrations.
74. BÜNGER, H. Ornithologische Erinnerungen aus der Mark 1899. Ornith. Monber. viii, pp. 54-56.
75. BURCHARDT, R. Der Nestling von *Rhinocetus jubatus*. Ein Beitrag zur Morphologie der Nestvögel und zur Systematik der Rhinocetiden. Acta Ac. German. lxxvii, No. 3, pp. 249-296, Taf. xi, figg. 1-6 in text. [*Gruiformes*.]
76. —. Der Nestling von *Rhinocetus jubatus*. Verh. Ges. Basel xii, pp. 412-429 cum fig. [*Gruiformes*.]
77. BÜRGER, O. Reisen eines Naturforschers im tropischen Südamerika. Leipzig, 1900, 8vo, viii, 396 pp.
78. BURI, R. O. Zur Anatomie des Flügels von *Micropus melba* und einigen anderen Coracornithes, zugleich Beitrag zur Kenntnis der systematischen Stellung der *Cypselidae*. Jena. Zeitschr. xxxiii, pp. 361-610, Taf. xvii-xxii. [*Cypseli*.]

79. BURNS, F. L. A monograph of the Flicker (*Colaptes auratus*). Wilson Bulletin No. 31 (2) vii, pp. 1-82. [*Pici*.]
80. BUTLER, A. G. On sexual differences in the wing of the House-Sparrow (*Passer domesticus*). Zoologist 1900, pp. 74 & 75. [*Fringillidæ*.]
- 80A. —. On the sexual differences in the wings of birds. Avicult. Mag. vi, pp. 81-83.
- 80B. —. The spotted Panther-bird (*Pardalotus punctatus*). T. c. pp. 165-167. [*Dicaeidae*.]
81. BUTLER, A. L. Birds collected and observed on the Larut Hills, Perak, in March and April 1898. J. Straits Asiat. Soc. No. 32, pp. 9-30. [*Muscicapidae*, *Timeliidae*.]
82. —. The Birds of the Andaman and Nicobar Islands. J. Bombay Soc. xiii, pp. 144-154.
83. BUTTERFIELD, E. P. Ornithological notes from the Wilsden District (Yorkshire). Zoologist 1900, pp. 432-434.
84. BUTTERFIELD, W. RUSKIN. Occurrence of the Melodious Warbler in Sussex. Zoologist 1900, p. 518. [*Sylviidae*.]
85. BÜTTIKOFER, J. Zoological results of the Dutch Scientific Expedition to Central Borneo—Birds. Notes Leyden Mus. xxi [1899], pp. 145-276, pls. 13-15. [*Strigiformes*, *Muscicapidae*.]
- CAMBURN, C. [See SHARPE, R. BOWDLER (492).]
86. CAMERON, E. S. On the migration of Phalaropes in Montana. Ibis 1900, pp. 67-70. [*Charadriiformes*.]
87. CAMPBELL, A. J. The distribution of Australian birds. Victoria Natural. xvii, pp. 93-95.
88. —. A trip to the Richmond river district. T. c. pp. 124-126, 138-145.
89. CAMPBELL, C. Remarkable flocking of Starlings to Cranond Island. Ann. Scott. Nat. Hist. 1900, pp. 182 & 183. [*Sturnidae*.]
- 89A. CARBAJAL, L. D. La Patagonia, studi generali, serie seconda, 1900, 8vo. Uccelli, pp. 245-286.
- 89B. CARROLL, J. J. Notes on the birds of Refugio County, Texas. Auk xvii, pp. 337-348.
90. CARTER, T. Notes from Point Cloates, N.W. Australia. Zoologist 1900, pp. 416-420.
- CAVENDISH, H. S. H. [See SHARPE, R. BOWDLER (492).]
91. \*CHAPMAN, F. M. Bird Studies with a Camera. With Introductory Chapters on the outfit and methods of the Bird Photographer. New York, 1900, 12mo, xvi, 218 pp.
92. —. Description of the nestling plumage of *Falco islandus*. Auk xvii, p. 387. [*Accipitriiformes*.]
93. —. The proper name for the Florida Yellow-throat (*Geothlypis trichas ignota*). T. c. pp. 389 & 390.
94. —. A study of the genus *Sturnella*. Bull. Amer. Mus. xiii, pp. 297-320, figg. 1-8. [*Icteridae*.]
95. CHERNEL, I. A tavaz hirdetöi. Termes. Kozl. Magyar Tars. xxxii, pp. 153-171.

96. CHRISTOLEIT, E. Über die Stimme des Karmingimpels (*Carpodacus erythimus*). Ornith. Jahrb. xi, pp. 153-160.
97. CLARK, P. The Black-headed Gulls in Essex (1899). Essex Natural. xi, pp. 184-190, pl. v. [*Lariformes*.]
98. CLARKE, W. EAGLE. On some birds from the Island of Negros, Philippines. Ibis 1900, pp. 351-361, pl. viii. [*Columbiformes*, *Caprimulgi*, *Ardeiformes*.]
99. —. Scops Owl (*Scops giu*) in Shetland. Ann. Scott. Nat. Hist. 1900, p. 184. [*Strigiformes*.]  
— [See also DE WINTON (130).]
100. CLARKE, W. J. Levantine Shearwaters (*Puffinus yelkouanus*) at Scarborough. Zoologist 1900, p. 521. [*Procellariiformes*.]
101. COCU, G. Observations sur le régime alimentaire de divers Oiseaux de France. Ornith. x, pp. 45-49.
- 101A. COHEN, D. A. Casual observations on a colony of the Black-crowned Night Herons (*Nycticorax nycticorax*). The Condor ii, pp. 10-12. [*Ardeiformes*.]
102. [COLBURN, W. W.] Obituary. Auk xvii, p. 92.
103. CONSTANTINESCU, C. I. Deux cœurs chez un Pigeon. Bull. Soc. Bucarest ix, pp. 401-405.
104. COOKE, W. W. The Birds of Colorado. A second appendix to Bulletin No. 37. Bull. Colorado exp. Stat. No. 56, pp. 179-239.
105. [CORDEAUX, J.] Obituary. Ornith. x, pp. 484-486.
106. COUES, E. On the validity of *Pipile* and *Pipilo*. Auk xvii, p. 65. [*Galliformes*.]
107. —. Date of discovery and Type Locality of the Mountain Mockingbird (*Orpheus montanus*). T. c. pp. 68 & 69. [*Mimidæ*.]
108. [—.] Obituary. T. c. p. 91; Ibis 1900, pp. 402 & 403; Zoologist 1900, pp. 80 & 81.
109. COULON, L. Catalogue de la classe des Oiseaux (collection européenne), Muséum d'Histoire Naturelle d'Elbeuf. Bull. Soc. Elbeuf xviii, pp. 97-132.
110. COWARD, T. A. & OLDHAM, C. The Birds of Cheshire. Manchester, 1900, 8vo. 278 pp. with map and illustrations.
111. CRETTE DE PALLUEL, BARON A. Notes sur quelques oiseaux de la faune du midi et du Nord-ouest de la France. Ornith. x, pp. 39-44.
112. —. Note sur les effets produits par le froid sur les Oiseaux pendant les hivers 1894-1895 et Decembre 1899 dans le Département des Côtes-du-Nord. T. c. pp. 235-240.
113. CROSSMAN, A. F. Notes on birds observed in Hertfordshire during the year 1899. Tr. Hertfordsh. Soc. x, pp. 180-184.
114. CSATO, J. v. Über das Vorkommen des Steinhühnes (*Cucubis saxatilis*, Mey.) in Ungarn. Ornith. Jahrb. xi, pp. 63-65. [*Galliformes*.]
115. CURRIE, R. P. A new Bird of Paradise. P. U. S. Mus. xxii, pp. 497-499. [*Paradisidæ*.]
116. [DAKIN, J. A.] Obituary. Auk xvii, pp. 196 & 197.

117. DALMAS, COMTE R. DE. Note sur une collection d'Oiseaux de l'île de Tobago (Mer des Antilles). Mem. Soc. zool. France xiii, pp. 132-144. [*Mimida*, *Vireonida*, *Tanagrida*, *Icterida*, *Piprida*, *Formicariida*.]
118. —. Description of two new species of Tanagers. Bull. B. O. C. xi, pp. 35 & 36. [*Tanagrida*.]
119. DAMIANI, G. Sul *Phalaropus hyperboreus*, Lath. all' Isola d' Elba con note sui *Phalaropus*. Atti Soc. Ligustica xi, pp. 27-34. [*Charadriiformes*.]
120. DAVENPORT, H. S. Nesting habits of the Sparrow Hawk. Zoologist 1900, pp. 426-428. [*Accipitriiformes*.]
121. DAVIDSON, R. G. Blackcap in Perthshire in December. Ann. Scott. Nat. Hist. 1900, p. 121. [*Sylviida*.]
122. DEBREUIL, C. Sur un cas d'affection conjugale entre deux Oiseaux d'ordres différents. Ornith. x, pp. 63 & 64.
123. DEDITIUS, K. Stimmenstärke der Lerche und des Kukuks. J. Ornith. 1900, pp. 453 & 454.
124. DEGEN, E. On sexual differences in the feathering of the wing. Zoologist 1900, pp. 249-255.
125. [D'HAMONVILLE, BARON LOUIS.] Obituary. Ornith. x, pp. 481-484.
126. DEICHLER, C. Der Vogelzug. J. Ornith. 1900, pp. 106-116.
127. —. On various species of *Linaria*. T. c. pp. 371 & 372. [*Fringillida*.]
128. DENBURGH, J. VAN. Notes on some birds of Santa Clara County, California. P. Amer. Phil. Soc. xxxviii, pp. 157-180.
129. DE VIS, C. W. Description of a *Charmosynopsis*. Ann. Queensland Mus. No. 5, pp. 12 & 13, pl. viii. [*Psittaci*.]
130. DE WINTON, W. E. Remarks on Mr Eagle Clarke's Summary of Migration Reports. Bull. B. O. C. xi, p. 40.
131. DICKINSON, G. Yellow-billed American Cuckoo (*Coccyzus americanus*) on the shores of the Menai Straits. Ibis 1900, p. 219. [*Cuculi*.]
132. [DICKSON, E. D.] Obituary. Ibis 1900, p. 562.
133. DIXON, C. The Game Birds and Wild Fowl of the British Islands. Zoologist p. 246.
134. DJERJUGIN, K. M. Matériaux pour servir à l'étude de l'ornithofaune du district "Tschoroch" (sud-ouest de la Transcaucasie) et des environs de la ville Trebizond. Annuaire Mus. St. Petersb. v, pp. 277-319.
135. DOBIE, W. H. The Little Owl in North Wales. Zoologist 1900, p. 556. [*Strigiformes*.]
136. DREW, S. H. On Tuberculosis in Pheasants in Wanganin. Tr. N. Zealand Inst. xxii, pp. 54-56. [*Galliformes*.]
137. DROUËT, H. et SAINTE-SUZANNE, COMTE DE. La Héronnière D'Écurey d'après les renseignements fournis. Ornith. x, pp. 197-204.
138. DUBOIS, A. Synopsis avium. Nouveau manuel d'Ornithologie. Fasciculus ii, iii, iv, v, pp. 81-368, pls. 2-7. [*Meropes*, *Cypseli*, *Caprimulgi*, *Trochili*, *Tracheophona*, *Oligomyoda*, *Tyrannida*, *Hirundinida*, *Paramythida*, *Muscicapida*, *Campophagida*, *Pycnonotida*, *Phyllornithida*, *Crateropida*, *Timeliida*.]

139. [DUBOIS, A.] Zwei neue Vögel vom Kongo (Freistaat). Ornith. Monber. viii, p. 69. [*Bucerotes, Ploceida.*]
140. \*DUGMORE, A. RADCLIFFE. Bird Homes. The Nests, Eggs and breeding habits of the Land birds breeding in the Eastern United States; with hints on the rearing and photographing of young birds. New York, 1900, 8vo, xvi, 183 pp., 40 pls.
141. DUTHIE [LIEUTENANT-COLONEL]. The Greylags (*Anser cinereus*) of Blair Drummond. Ann. Scott. Nat. Hist. 1900, pp. 193-196. [*Anseriformes.*]
142. DWIGHT, J. The moult of the North American *Tetraonidae* (Quails, Partridges and Grouse). Auk xvii, pp. 34-51, 143-166, pls. iv & v.  
I. Fundamental principles of Moults and of Plumage, pp. 34-43.  
II. Moults of the Individual Species, pp. 43-51. [*Galliformes.*]
143. —. The moult of the North American Shore birds (*Limicola*). T. c. pp. 368-385. [*Charadriiformes.*]
144. —. The sequence of plumages and moults of the Passerine birds of New York. Ann. N. York Ac. xiii, pp. 73-345, pls. i-vii.  
I. Indoor study of Moults, pp. 74-82. II. Process of Moults, pp. 82-97. III. Early plumages and Moults of young birds, pp. 98-101.  
IV. Sequence of plumages and Moults, pp. 101-116. V. Color facts & Color theories, pp. 116-124. VI. Outdoor study of Moults, pp. 124-129. VII. Plumages and Moults of New York species, pp. 130-135. VIII. Bibliography, pp. 135-345.
145. EDER, R. Nachtrag zur Vogelfauna von Gastein. Ornith. Jahrb. xi, pp. 161-165.
146. EKMAN, A. S. Ornitologiska iakttagelser i Torne lappmarks fjäll-trakter. Ofv. Ak. Forh. 1900, pp. 1013-1018.
147. ELLIOT, E. A. S. Twelve months' notes on birds in the South Hams District. Rep. Devon. Ass. xxxii, pp. 277-282.
- 147A. EMERSON, W. O. Occurrence in California of Harris's Sparrow (*Zonotrichia querula*). The Condor ii, p. 145. [*Fringillidae.*]
148. ERLANGER, C. F. VON. Beiträge zur Avifauna Tunesiens. J. Ornith. 1900, pp. 1-105. [*Upupa, Columbiformes, Turdidae, Sylviidae.*]
149. EULER, C. Descrição de ninhos e ovos das Aves do Brazil. Revist. Mus. Paulista iv, pp. 1-148.
150. FARQUHAR, A. M. Ornithological Notes in the New Hebrides. Ibis 1900, pp. 607-612. [*Laniidae.*]
151. FARQUHAR, STUART ST. J. On two Nesting-places of Gannets and Terns in the South Indian Ocean. Ibis 1900, pp. 63-67. [*Pelecaniformes, Lariformes.*]
152. \*FARR, M. S. Check List of New York Birds. Bull. N. York Mus. No. 35, vol. vii.
153. \*FAXON, W. & HOFFMANN, R. The Birds of Berkshire County, Massachusetts. Coll. of Berkshire Hist. and Sci. Soc. iii, pp. 109-166.
154. FERREIRA, J. B. Sobre alguns exemplares pertencentes á fauna do Norte de Angola. J. Sci. Lisb. (2) vi, No. xxi. Aves p. 54. [*Accipitriformes, Bucerotes.*]
- 154A. FESTA, E. [See SALVADORI, T. (546).]



155. FINN, F. Notes on the *Ploceidæ*. J. Asiat. Soc. Bengal (2) lxviii, pp. 250-257: Avicult. Mag. vi, pp. 145-147, 182 & 183. [*Ploceidæ*.]
156. FINSCH, O. On a collection of birds made by Mr Karl Schädler at Sekru (northwest coast of New Guinea). Notes Leyden Mus. xxii, pp. 49-69. [*Muscicapidæ*.]
157. —. Ueber eine anscheinend neue Art *Dicaeum* vom Arfak-Gebirge (Neu Guinea). T. c. p. 70. [*Dicaeidæ*.]
158. —. Zur Catalogisirung der Ornithologischen Abtheilung. T. c. pp. 75-125. [*Cuculi*.]
159. —. Zur Catalogisirung der Ornithologischen Abtheilung. T. c. pp. 129-161.  
—, Ueber eine neue *Treron*-art von den Kangean-Inseln. T. c. p. 162. [*Columbiformes*.]
160. —. Ueber eine dritte Sendung Vogelbälge aus Central-Borneo (Mahakkam). T. c. pp. 163-178.
161. —. Zur Catalogisirung der Ornithologischen Abtheilung. T. c. pp. 193-224. [*Sylviidæ*, *Pycnonotidæ*, *Muscicapidæ*, *Troglodytidæ*, *Timeliidæ*.]
- 161A. —. Meine Beobachtungen über Fregattvögel (*Fregata aquila* L., *S. ariel* Gould). Ornith. Monschr. Schutze xxv, pp. 446-452. [*Pelecaniformes*.]  
—, [See also VORDERMAN, A. G. (555).]
- 161B. FISHER, W. K. A list of birds observed on Mt. St. Helena, California. The Condor ii, pp. 135-138.
162. FLEMING, J. H. Ontario Bird Notes. Auk xvii, pp. 176 & 177. [*Strigiformes*.]
163. FORBES, H. O. Catalogue of the Lizard-tailed (*Saururæ*), the Toothed (*Odontornithes*) and the Ostrich-like (*Struthionies*) Birds; and of the Tinamous (*Tinami*) and the Divers (*Colymbi*) in the Derby Museum. Bull. Liverp. Mus. iii, pp. 25-34. [*Archæopteryges*, *Odontornithes*, *Struthionies*, *Tinamiformes*, *Colymbiformes*.]
164. —. On a new species of *Aplonis*, in the Derby Museum, from Santa Cruz Island, in the Western Pacific. T. c. p. 116. [*Sturnidæ*.]
165. — & ROBINSON, H. C. Catalogue of the Charadriomorphic birds (*Charadriiformes*) continued [see Zool. Rec. xxxvi, Aves p. 13]: Pigeons (*Columbæ*), and Sand-Grouse (*Pterocletes*). T. c. pp. 117-150. [*Columbiformes*, *Pteroclidiformes*.]
166. FORREST, H. E. The movements of Starlings. Zoologist 1900, pp. 131-141, 479. [*Sturnidæ*.]
167. —. The Little Owl in Flintshire. T. c. pp. 482 & 483. [*Strigiformes*.]
168. —. Breeding of the Tufted Duck (*Fuligula cristata*) in Shropshire. T. c. pp. 506-510. [*Anseriformes*.]
169. FOX, W. STORRS. The Ring-Ouzel in Derbyshire. Zoologist 1900, pp. 1-10. [*Turdidæ*.]
170. —. Birds of North Derbyshire. Derbysh. Nat. i, pp. 12-15, 32-34, 53-55, 73-75.
171. FROGGATT, W. W. Insects and Birds. Agric. Gaz. N. S. W. xi, pp. 436-446.

172. FUHRER, L. VON. Der Prachtadler (*Aquila fulvescens* Gray) in Nord-Albanien erlegt. Ornith. Jahrb. xi, pp. 25-28. [*Accipitriformes*.]
173. —. Beiträge zur Ornith. Montenegro's und angrenzenden Gebietes von Nord-Albanien. T. c. pp. 165-189.
174. GAAL DE GYULA, G. Beiträge zur Erforschung des Vogelzuges auf Grund der grossen Frühjahrs-Beobachtung der Rauchschnalbe in Ungarn im Jahre 1898. *Aquila* vii, pp. 8-379, Taf. i-xxxii. [*Hirundinidae*.]
175. GADEAU DE KERVILLE, H. Sur un Pic Épeiche (*Picus major* L.) atteint d'albinisme imparfait. Bull. Soc. Rouen.
176. —. Oie domestique à tête anormale. Naturaliste, 15th November, 1900.
177. GIGLIOLI, H. H. The Extinct Australian Emu. Victorian Natural. xvii, pp. 114 & 115. [*Struthioness*.]
- 177A. GIGLIOLI, E. H. Intorno ad una presunta nuova specie di Athene, trovata in Italia. *Avicula* iv, pp. 57-60. [*Strigiformes*.]
178. GILMOUR, T. F. The Long-eared Owl (*Asio otus*) in Islay. Ann. Scott. Nat. Hist. 1900, p. 49. [*Strigiformes*.]  
GODMAN, F. D. [See SALVIN, O. (457).]
- 178A. GOELDI, E. Monographias Brasileiras. II. As Aves do Brasil. Segunda Parte. Rio de Janeiro: 1900, 12mo., pp. 311-364. Index pp. 1-82.  
[Part I, cf. Zool. Rec. xxxi, Aves, p. 9.]
179. GOODFELLOW, W. On a new Humming-bird from Eastern Ecuador. Bull. B. O. C. x, p. xlviii. [*Trochilidae*.]
- 179A. —. A Naturalist's Notes in Ecuador. *Avicult. Mag.* vi, pp. 65-72, 89-99, 120-128, 169-177, 221-228, 262-270.
180. GOUBIE, R. Sur la nidification du Flammant en Camargue. Ornith. x, pp. 229-234. [*Phenicopteriformes*.]
181. [—]. Obituary. Ornith. x, pp. 487 & 488.
182. GRABHAM, O. Natural History Notes from Yorkshire for 1899. Zoologist 1900, pp. 229-236.
183. —. Bird migration returns from the Spurn and Flamborough Lighthouses. Naturalist 1900, pp. 109-112.
184. GRANGER, A. La Faune Ornithologique de la Sibirie Orientale considérée dans ses rapports avec la Faune Française. Bull. Soc. Beziere xix, pp. 75-99.  
GRANIT, A. W. [See NORDLING, E. (346).]
185. GRANT, W. R. OGILVIE. On the birds of Hainan. P. Zool. Soc. London 1900, pp. 457-504, pls. xxxiii & xxxiv. [*Galliformes*, *Ardeiformes*, *Timeliidae*, *Corvidae*, *Dicruridae*, *Zosteropidae*, *Campophagidae*, *Muscicapidae*, *Cuculidae*, *Trogonidae*, *Meropidae*, *Halcyonidae*, *Strigiformes*, *Accipitriformes*, *Columbiformes*.]
186. —. On the Birds collected during an Expedition through Somaliland and Southern Abyssinia to the Blue Nile. With Field-notes by Lord Lovat. Ibis 1900, pp. 115-178, 304-337, pls. ii-vi. [*Oriolidae*, *Ploceidae*, *Nectariniidae*, *Muscicapidae*, *Sylviidae*, *Turdidae*, *Campophagidae*, *Caprimulgidae*, *Columbiformes*, *Galliformes*.]

187. [GRANT, W. R. OGILVIE.] On the birds collected by Capt. A. W. S. Wingate in South China. T. c. pp. 573-606, pl. xii. [*Sylviidae*, *Timeliidae*, *Sittidae*, *Anseriformes*, *Accipitriformes*, *Pittaci*.]
188. —. On the birds of Southern Arabia. With Field notes by A. Blayney Percival. Nov. Zool. vii, pp. 243-273, pl. x. [*Alaudidae*, *Muscicapidae*, *Sylviidae*.]
189. —. Additions to the List of Birds of Southern Arabia. T. c. p. 591.
190. —. On new species from Hainan. Bull. B. O. C. x, pp. xxxvi & xxxvii. [*Muscicapidae*, *Trogones*.]  
 —. On new species from S. and W. China. T. c. pp. xxxvii & xxxviii. [*Sittidae*, *Sylviidae*, *Muscicapidae*.]
191. —. New species from Abyssinia. T. c. pp. xxxviii & xxxix. [*Otides*, *Pici*, *Indicatores*.]
192. —. On new birds from Hainan. T. c. pp. xlix & l. [*Timeliidae*.]
193. —. On a new species of Bush-Shrike. T. c. p. l. [*Laniidae*.]
194. —. On a new species of Stone-Pheasant from British East Africa. T. c. pp. cvi & cvii. [*Phasiani*.]
195. —. Two new species of African Birds. Op. cit. xi, pp. 30 & 31. [*Fringillidae*, *Alaudidae*.]
- 195A. GRIFFITH, F. L. Archaeological Survey of Egypt. Seventh Memoir, Beni Hasan. Part iv. Zoological and other details, Birds, pp. 2-3, pls. vi-xii.
- 195B. GRINNELL, J. Pacific coast Avifauna No. i. Birds of the Kotzebue Sound Region, Alaska. Cooper Orn. Club Cal. 1900, pp. 1-80, with map.
- 195C. —. New races of birds from the Pacific Coast. The Condor ii, pp. 127-129. [*Paridae*, *Corvidae*, *Fringillidae*.]
196. GURNEY, J. H. Ornithological notes from Norfolk for 1899. Zoologist 1900, pp. 97-115, pl. ii. [*Galliformes*.]
197. —. A short history of the Bearded Titmouse (*Panurus biarmicus*). T. c. pp. 358-374, pl. v, map. [*Paridae*.]
198. HAASE, O. On *Puffinus kuhli* in the Färöe Islands. Ornith. Møuber. viii, p. 43. [*Procellariiformes*.]
199. —. Ornithologische Notizen aus "St. Hubertus" 1898. T. c. pp. 145-153, 161-165.
200. HAIGH, G. H. CATON. Bird notes from North-east Lincolnshire during the autumn of 1899. Zoologist 1900, pp. 201-212.
201. HALL, R. Field-notes on the Birds of Kerguelen Island. Ibis 1900, pp. 1-34. [*Pelecaniformes*, *Anseriformes*, *Charadriiformes*, *Lariformes*, *Procellariiformes*, *Sphenisciformes*.]
202. —. The insectivorous birds of Western Australia. J. Agric. W. Austral. ii, pp. 321-329, 388-397. [*Dicceidae*, *Artamidae*.]
203. —. Notes on *Malurus gouldii* and *Malurus cyaneus*, with special references to changes in plumage. P. Soc. Victoria (2) xii, p. 59. [*Sylviidae*.]
204. —. Notes on a collection of birdskins from Kalgoorlie. Tr. R. Soc. S. Austral. xxiv, pp. 24-34.

205. [HALL, R.] Notes on the Blue Wrens. Victorian Natural. xvi, pp. 135-141. [*Muscicapidae*.]
206. —. Notes on some abnormal-plumaged birds. T. c. pp. 171-180.
207. —. Some Ornithological Notes. Op. cit. xvii, pp. 19-22 cum fig. [*Dicaeidae*.]
208. —. Field notes on the House Swallow and White-throated Thickhead. T. c. pp. 48-54. [*Laniidae*.]
209. —. The distribution of Australian birds—additional records. T. c. pp. 59-63.
210. —. Field notes on the Great Skua Gull (*Megalestris antarctica*). T. c. pp. 101-104. [*Lariformes*.]
211. —. Foster parents to the Bronze Cuckoo. T. c. p. 128. [*Cuculi*.]
212. \* —. The Insectivorous Birds of Victoria. Melbourne, 1900.
213. HALY, A. Aids to the identification of Ceylon birds. Part I.—Introduction and Key to the Passeres. J. Ceylon Asiat. Soc. xv, No. 49, pp. 155-173.
214. HANITSCH, R. An expedition to Mount Kina Balu, British North Borneo. J. Straits Asiat. Soc. No. 34, Birds, p. 69.
215. HARGRAVE, L. Sailing birds are dependent on wave-power. J. R. Soc. N. S. Wales xxxiii, pp. 125-128.
216. HÄRMS, M. Beiträge zur Kenntnis der ornithologischen Fauna des Archangelsker Gouvernements. Ornith. Jahrb. xi, pp. 81-106.  
— [See ZARUDNY, N. (578).]
- 216A. HARTERT, E. Das Tierreich 9. Lieferung. Aves, Trochilidae. Berlin, 1900, 8vo, x, 254 pp. [*Trochili*.]
217. —. The birds of Ruk in the Central Carolines. Nov. Zool. vii, pp. 1-11. [*Zosteropidae*, *Muscicapidae*, *Sylviidae*, *Eulabetidae*, *Ploceidae*, *Lariformes*.]
218. —. The Birds of Dammer Island in the Banda Sea. T. c. pp. 12-24. [*Muscicapidae*, *Sylviidae*, *Zosteropidae*, *Meliphagidae*, *Laniidae*, *Pittidae*, *Halcyones*, *Accipitriformes*, *Cuculi*.]
219. —. Another small Contribution to African Ornithology. T. c. pp. 25-53. [*Pteroclidiformes*, *Piciformes*, *Meropes*, *Muscicapidae*, *Fringillidae*, *Alaudidae*, *Nectariniidae*, *Turdidae*.]
220. —. The Birds of Buru, being a list of collections made on that island by Messrs William Doherty and Dumas. T. c. pp. 226-242, pl. iv. [*Strigiformes*, *Psittaciformes*, *Cuculi*, *Muscicapidae*, *Zosteropidae*, *Timeliidae*, *Turdidae*, *Columbiformes*.]
221. —. On *Turacus chalcophus* Neumann. T. c. p. 278, pl. i. [*Musophagi*.]
222. —. Some miscellaneous notes on Palearctic Birds. T. c. pp. 525-534. [*Certhiidae*, *Sittidae*, *Corvidae*, *Pici*, *Strigiformes*, *Halcyones*.]
223. —. List of a collection of Birds from the Lingga Islands. T. c. pp. 549 & 550.  
—. The Birds of the Banda Islands. T. c. pp. 551-554. [*Accipitriformes*.]
224. —. On the genus *Scoerhynchus* Oates. T. c. pp. 548 & 549. [*Timeliidae*.]

225. [HARTERT, E.] Ueber das Studium der Unterarten. J. Ornith. 1900, pp. 129-134.
226. —. Allgemeines und Specielles über Kolibris. T. c. pp. 350-368. [*Trochili.*]
227. —. On hybrid Humming-Birds. Bull. B. O. C. x, pp. xxxix & xl. [*Trochili.*]
228. —. On nesting-boxes for birds. T. c. pp. xlv & xlv. A ratio-meter. T. c. p. xlv. On measurement of bird-skins. T. c. pp. xlvi & xlvii.
229. —. On a new spine-tailed Swift from St Thomas, W. Africa. T. c. p. liii. [*Cypseli.*]
230. —. On the 50th Anniversary Meeting of the German Ornithological Society at Leipzig. Op. cit. xi, p. 10.
231. —. On Baird's Sandpiper in Sussex. T. c. p. 27. [*Charadriiformes.*]
232. —. On *Parus salicarius kleinschmidtii* in England. T. c. pp. 27 & 28. [*Paridæ.*]
233. —. On new species of South American birds. T. c. pp. 37-40. [*Cærebide, Formicariidæ, Vireonidæ, Tyrannidæ, Cotingidæ, Troglodytidæ.*]
234. [HARTLAUB, G.] Obituary. Ornith. Monber. viii, p. 188.
235. HARVIE-BROWN, J. A. An old record of the Kite in Fifeshire. Ann. Scott. Nat. Hist. 1900, p. 49. [*Accipitriiformes.*]
236. —. Former presence of the Ptarmigan in Rum. T. c. p. 50. [*Galliformes.*]
237. —. Pratincole (*Glareola pratincola*) near Montrose. T. c. p. 51. [*Charadriiformes.*]
238. —. The Great Snipe in Stirlingshire. T. c. p. 247. [*Charadriiformes.*]
239. —. Albatross near the Faroes (*Diomedea melanophrys*). Zoologist 1900, p. 324. [*Procellariiformes.*]
240. HEGYFÖKY, J. Die Witterung zur Zeit der Ankunft der Rauchschwalbe. Aquila vii, pp. 380-391, Taf. xxxiii-xxxviii.
241. HEINROTH, O. *Poephila heeki*, n. sp. Ornith. Monber. viii, pp. 22 & 23. [*Ploceidæ.*]
242. —. Ueber die Fusshaltung fliegender Möven und Kampfschnepfen bei Frost. T. c. pp. 41 & 42.
243. —. On *Trus tilfordi*. J. Ornith. 1900, p. 247. [*Grueiformes.*]
244. HELLMAYR, C. E. Bemerkungen über die neuweltliche Gattung *Poliophtila* nebst Beschreibung einer neuen Subspecies aus Peru. Nov. Zool. vii, pp. 535-538. [*Muscicapidæ.*]
245. —. Über eine neue Meise, *Parus nigriloris*. Ornith. Monber. viii, p. 139. [*Paridæ.*]
246. —. On the genus *Ægithalus*. J. Ornith. 1900, p. 372. [*Paridæ.*]
247. —. Einige Bemerkungen über die Graumeisen. Ornith. Jahrb. xi, pp. 201-217. [*Paridæ.*]

248. HELM, F. Betrachtungen über die Beweise Gätkes für die Höhe des Wanderfluges der Vögel. J. Ornith. 1900, pp. 435-452.
249. HELME, A. H. Baird's Bunting on Long Island. Auk xvii, p. 296. [*Fringillidae*.]
250. HENRY, R. On the probable origin of *Notornis mantelli*, and its extinction in New Zealand. Tr. N. Zealand Inst. xxii, pp. 53 & 54. [*Ralliformes*.]
251. HENSHAW, H. W. Occurrence of *Larus glaucescens* and other American birds in Hawaii. Auk xvii, pp. 201-206. [*Lariformes*, *Procellariiformes*, *Anseriformes*, *Charadriiformes*.]
252. —. Description of a new Shearwater from the Hawaiian Islands. T. c. pp. 246 & 247. [*Procellariiformes*.]
253. [HERMAN, O.] Rapport sur l'ouvrage intitulé 'Les oiseaux de la Hongrie et leur importance économique' [par. E. Chernel]. Pp. 22, 10 plates. A report presented to the International Ornithological Congress at Paris by the Hungarian Minister of Agriculture.
254. —. Vorbericht zum VII Bande von 'Aquila.' Aquila vii, pp. 1-16.
- 254A. HERRICK, F. H. Care of Nest and Young. Auk xvii, pp. 100-103, pls. ii & iii. [*Turdidae*.]
255. HILL, C. BOYCE. Notes on the nesting of the Pomatorhine Skua. Ibis 1900, pp. 526 & 527, pl. xi. [*Lariformes*.]
256. HINDE, S. L. On further collections of British-East-African birds. With notes by R. B. Sharpe. Ibis 1900, pp. 492-501. [*Nectariniidae*, *Sylviidae*, *Caprimulg.*]
257. HINXMAN, L. W. Yellow Wagtail at Beauvy. Ann. Scott. Nat. Hist. 1900, p. 48. [*Motacillidae*.]
258. HIRC, D. Ornitolozke biljezke iz okoline bakarske. Glasnik Naravosl. druzt. xi, pp. 42-47.
259. HOLEWA, H. Die Vogelfauna in Schlesien. Ein Beitrag zur Kenntnis der heimathlichen Vogelwelt. Verh. Ver. Brunn xxxviii, pp. 1-28.
260. HOLMBOE, J. Notizen über die endozoische Samenverbreitung der Vögel. Nyt Mag. Naturv. xxxviii, pp. 303-320.
- 260A. HOWARD, O. W. Nesting of the Mexican Wild Turkey in the Huachuca Mts., Arizona. The Condor ii, pp. 55-57, figg. 1, 2. [*Galliformes*.]
261. HOWE, R. H. Ranges of *Hylocichla fuscescens*, and *Hylocichla fuscescens salicicola* in North America. Auk xvii, pp. 18-25. [*Turdidae*.]
262. —. A new subspecies of the genus *Hylocichla*. T. c. pp. 270 & 271. [*Turdidae*.]
263. HOWSE, R. Index-Catalogue of the birds in the Hancock collection, presented by deed of gift, 1st Nov. 1883, to the Trustees of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne, by John Hancock. Nat. Hist. Tr. Northumb. xiii, pp. 273-409.
264. HUDSON, W. H. The Dartford Warbler (*Sylvia provincialis*). How to save our rare birds. Humane Review, April 1900, pp. 28-38. [*Sylviidae*.]

265. HUTCHINSON, T. Birds of Herefordshire. Tr. Woolhope Club, 1898-99, pp. 190-230.
266. [HYLTON, HEDWORTH, LORD.] Obituary. *Ibis* 1900, p. 220.
267. IHERING, H. VON. Aves de São Paulo. *Mus. Paulista*, No. 4, pp. 1-20.
268. —. Aves observadas em Cantagallo e Nova Friburgo. *Revist. Mus. Paulista* iv, pp. 149-164.
269. —. Catalogo critico-comparativo dos ninhos e ovos das aves do Brazil. T. c. pp. 191-300, figg. 1-25 (nests).
270. JACOBI, A. Verzeichniss der Landvögel Japans. *Zool. Jahrb.* 1900, pp. 469-477.
271. JANDA, G. Der Rüthelfalke (*Tinnunculus naumanni* Fleisch.) in Süd-Mähren. *Ornith. Jahrb.* xi, pp. 189-195. [*Accipitriiformes*.]
272. \*JAPP, H. Our common Cuckoo and other Cuckoos and Parasitical Birds; an attempt to reach a True Theory of them by comparative Study of Habit and Function: with a thorough Criticism and Exposure of Darwin's Views and Romanes's Views and those of their Followers. London, 1899, 8vo.
273. JOHANSEN, H. Zur Fortpflanzung des *Lanius excubitor homeyeri* (Cab.). *Ornith. Jahrb.* xi, pp. 28-34. [*Laniidae*.]
- 273A. JOHNSON, H. C. In the breeding home of Clarke's Nutcracker (*Nucifraga columbianus*). *Condor* ii, pp. 49-52. [*Corvidae*.]
274. JONES, K. H. Land-birds at sea. *Zoologist* 1900, pp. 51-53.
275. —. Notes from South-Western Europe. T. c. pp. 448-457.
276. JOURDAIN, F. C. R. Rough notes on Derbyshire Ornithology, 1899-1900. *Zoologist* 1900, pp. 428-431.
- 276A. KIRKWOOD, F. C. The Occurrence of the Egyptian Goose in North America. *Auk* xvii, pp. 64 & 65. [*Anseriiformes*.]
277. KLEINSCHMIDT, O. Vogelschutz vom Standpunkte wissenschaftlicher Kritik. *J. Ornith.* 1900, pp. 117-119.
278. —. Arten oder Formenkreise. T. c. pp. 134-139.
279. —. *Aquila fulvens* in Europe. *Ornith. Monber.* viii, pp. 65 & 66. [*Accipitriiformes*.]
280. —. Kurze Bemerkungen über das individuelle und geographische Variieren der Meisen und Baumläufer. T. c. pp. 167-169. [*Paridae*, *Certhiidae*.]
281. KNIGHT, O. W. Some notes on the Herring Gull. *Auk* xvii, pp. 63 & 64, 169. [*Lariiformes*.]
282. KOBÉ, W. H. The Rufous Humming-birds of Cape Disappointment. *Auk* xvii, pp. 8-15. [*Trochilidae*.]
283. —. The birds of Cape Disappointment, Washington. T. c. pp. 349-358.
284. KOLLIBAY, P. R. *Pratincola rubicola* in Ober-Schlesien. *Ornith. Monber.* viii, p. 81. [*Turdidae*.]
285. —. Weitere Notizen aus Schlesien. *J. Ornith.* 1900, pp. 421-434.
286. —. *Nycticorax griseus* Strickl. als Brutvogel in Schlesien. *J. Ornith.* 1900, pp. 152-155. [*Ardeiformes*.]

287. KRANK, H. Fågelfaunan uti Gamla Karleby, Larsmo och en del af Kronoby socknar. Acta Soc. Faun. Fenn. xv, No. 4, pp. 1-67.
288. KROHN, J. H. B. Sammler und Sammlungen. Ornith. Monber. viii, pp. 30-32.
289. LAIDLAW, T. G. Report on the movements and occurrence of birds in Scotland during 1899. Ann. Scott. Nat. Hist. 1900, pp. 70-87.
290. LA TOUCHE, J. D. D. Notes on the Birds of North-west Fokkien. Ibis 1900, pp. 34-51. [*Fringillidæ*, *Coraciiformes*, *Pici*, *Galliformes*.]
291. —. Note sur des Exemplaires du *Microhierax melanoleucus* Blyth (*Microhierax chinensis* A. Dav.), obtenus vivants au Fokien, dans le sud-est de la Chine. Ornith. x, pp. 183-186. [*Accipitriformes*.]  
LAVEROCK, W. S. [See ROBINSON, H. C. (423).]
292. [LAYARD, E. L.] Obituary. Ibis 1900, pp. 220, 404.—Auk xvii, pp. 321 & 322.
294. LE SOUËF, D. Descriptions of some new or rare eggs of Australian birds. Ibis 1900, pp. 458-464. [*Muscicapidæ*, *Meliphagidæ*, *Ploceidæ*, *Atrichidæ*, *Ornithidæ*, *Sylviidæ*, *Turdidæ*.]
295. —. Description of some Nests and Eggs from New Guinea. Ibis 1900, pp. 612-617, figg. 1 & 2. [*Paradisidæ*, *Meliphagidæ*, *Campophagidæ*, *Halcyones*, *Columbiformes*.]
296. —. Description of some North Australian birds' eggs. Victorian Natural. xvii, pp. 145 & 146. [*Prionopidæ*, *Sylviidæ*, *Laniidæ*, *Pittaci*.]
297. —. Birds in Western Australia. Op. cit. xvi, pp. 195-200.
298. —. The Mud-nest building birds of Australia. Knowledge xxiii, pp. 92, 94. [*Corvidæ*.]
299. LOBANOFF, D. I. Catalogue du Musée de la Société Ouraliennne D'Amateurs des Sciences Naturelles à Ekathérinebourg. Zapiski Ural. Obshch. xx (1898), Oiseaux pp. 382-435.
300. LOOMIS, L. M. California Water Birds, No. iv. Vicinity of Monterey in Autumn. P. Calif. Ac. ii, pp. 277-322, pl. xv (map). [*Procellariiformes*.]
301. —. California Water Birds, No. v. Vicinity of Monterey in May and early June. T. c. pp. 349-363.
302. LOUDON, H. B. Beitrag zur Kenntnis der ornithologischen Fauna Liv. Esth. und Kurlands. Ornith. Jahrb. xi, pp. 229-233.  
LOVAT, LORD. [See GRANT, W. R. OGILVIE (186).]
303. LUCAS, F. A. Characters and relations of *Gallinuloides* a fossil Gallinaceous Bird from the Green river Shales of Wyoming. Bull. Mus. Harvard xxxvi, pp. 79-81, pl. i. [*Galliformes*.]  
McCONNELL, F. V. [See SHARPE, R. B. (491).]
304. McCUE, J. J. Geese. Agric. Gaz. N.S.W. xi, pp. 952-962, figg. 1-4. [*Anseriformes*.]
305. MACGILLIVRAY, W. L. Chiff-chaff (*Phylloscopus rufus*) and the Long-eared Owl (*Asio otus*) in Barra. Ann. Scott. Nat. Hist. 1900, p. 121. [*Sylviidæ*, *Strigiformes*.]
- 305A. McGREGOR, R. C. A list of unrecorded Albinos. Condor ii, pp. 86-88.



355. [M'GREGOR, R. C.] Description of a new *Pipilo*. Condor ii, p. 43. [*Fringillidae*.]
356. —. New Alaskan Birds. Condor iii, no. 1. [*Fringillidae*.]
357. —. A Humming-bird *Calypte anna*, as a fertiliser of plants. Amer. Natural. xxxiii, p. 563.
358. MACKENZIE, H. The Grasshopper Warbler *Locustella naevia*: nesting in Morayshire. Ann. Scott. Nat. Hist. 1900, p. 46. [*Sylviidae*.]
- MACKINDER, H. J. [See SHARPE, R. BOWDLER (491).]
359. \*MACOY, J. Catalogue of Canadian Birds. Part 1. Gallinaceous Birds and Pigeons. Including the following orders: *Pygopodes*, *Longipennes*, *Tubinares*, *Steganopodes*, *Anseres*, *Herodiones*, *Paludicola*, *Limicola*, *Gallinae*, and *Columbae*. Ottawa, 1900, 8vo, vii, 218 pp.
360. MACPHERSON, H. A. Black Redstart in the Solway Area. Ann. Scott. Nat. Hist. 1900, pp. 47 & 48. [*Turdidae*.]
361. —. The Bearded Tit: a correction corrected. Zoologist 1900, p. 478. [*Paridae*.]
362. MADARASZ, J. VON. Ueber einige neue und seltene Vögel von Neu-guinea. Ornith. Monber. viii, pp. 1-4. [*Muscicapidae*, *Prionopidae*, *Sylviidae*, *Meropidae*.]
363. —. *Merula melanaria*, n. sp. T. c. p. 23. [*Turdidae*.]
364. —. *Chetusia gregaria* (Pall.) in Ungarn erlegt. T. c. p. 170. [*Churadriiformes*.]
365. —. Bemerkungen zu Prof. M. Marek's Artikel "Ornithologisches aus Zeugg." Ornith. Jahrb. xi, pp. 70-73.
366. —. *Anser neglectus* Sushk. in der Ungarischen Ornith. Termes. Füzetek xxii, pp. 75-79. [*Anseriformes*.]
367. —. Ueber die Kaukasischen *Acroculia*-Arten. T. c. pp. 197-204, Tab. vii. [*Paridae*.]
- 367A. MAILLIARD, J. Land birds of Marin County, Cal. The Condor ii, pp. 62-68.
368. MARSHALL, GUY A. K. Notes on Mashonaland Birds. Ibis 1900, pp. 221-270. [*Corvidae*, *Dicruridae*, *Turdidae*, *Sylviidae*, *Nectariniidae*.]
369. MARTIN, BASIL, W. Cuckoo breeding in London District. Zoologist 1900, p. 481. [*Cuculi*.]
370. MARTENS, G. H. Vögel. Hamburger Magalhaensische Sammelreise, pp. 1-34.
371. MARTORELLI, G. Nota Ornitologica sopra l' *Ardeola idae* (Hartlaub) e genuo sul dicroismo di varii Ardeidi. Atti Soc. Ital. xxxix, pp. 349-356, pl. vii. [*Ardeiformes*.]
372. —. Les apparitions des Turdides Sibériens en Europe. Ornith. x, pp. 241-292. [*Turdidae*.]
- 372A. —. Nuova apparizione del *Turdus obscurus* Gm. in Italia. Avicula iv, pp. 33-35. [*Turdidae*.]
373. MEAD-BRIGGS, T. H. Birds at Lynmouth. Sci. Gossip (2) vii, pp. 1-4, 41-43.
374. MEADE-WALDO, E. G. B. The Little Owl (*Carine noctua*). Zoologist 1900, p. 556. [*Strigiformes*.]

325. [MEADE-WALDO, E. G. B.] On the results of providing nesting-boxes for birds in Kent. Bull. B. O. C. xi, pp. 13-15.
326. MEIKLEJOHN, A. H. How does the Cuckoo carry her egg? Zoologist 1900, pp. 262-264. [*Cuculi*.]
327. —. Note on the nesting habits of the Sparrow-Hawk. T. c. pp. 381 & 382. [*Accipitriformes*.]
328. —. The origin and meaning of the names of British birds. T. c. pp. 511-516.
329. MENZBIER, M. On *Hierofulco altaicus* Menzb. Bull. B. O. C. xi, p. 3. *H. lorenzii*, n. sp. t. c. pp. 3 & 4. [*Accipitriformes*.]
- On a new species of Sea-Eagle. T. c. pp. 4 & 5. [*Accipitriformes*.]
330. MÉREL, F. Note sur l'élevage en France du Colin de Virginie (*Ortyx virginianus* L.). Ornith. x, pp. 191-195. [*Galliformes*.]
331. MEYRICK, E. Notes on Garden birds. Rep. Marlbor. Soc. No. 48, pp. 66-69.
332. MICHEL, C. Mission de Bonchamps Vers Fachoda à la rencontre de la mission Marchand à travers L'Éthiopie. Paris, 1900, 8vo, 560 pp., with map. Appendice A. Oiseaux pp. 504-506.
333. [MILNE-EDWARDS, A.] Obituary. Ibis 1900, pp. 563 & 564.—Auk xvii, pp. 320 & 321.—Ornith. Monber. viii, p. 96.
334. [MIVART, ST. GEORGE.] Obituary. Ibis 1900, pp. 562 & 563.
335. [MONK, T. J.] Obituary. Ibis 1900, pp. 220, 402.
336. \*NASH, C. W. Check List of the birds of Ontario and Catalogue of birds in the Biological Section of the Museum Department of Education, Toronto. Toronto, 1900, 8vo, 58 pp.
337. NELSON, E. W. Description of a new subspecies of *Meleagris gallopavo* and proposed changes in the nomenclature of certain North American Birds. Auk xvii, pp. 120-126. [*Galliformes*, *Pici*, *Tyrannidae*, *Icteridae*.]
338. —. Description of thirty new North American birds, in the Biological Survey Collection. T. c. pp. 253-270. [*Tinamiformes*, *Galliformes*, *Trochili*, *Momot*, *Pici*, *Cuprimulgi*, *Cypseli*, *Tyrannidae*, *Dendrocolaptidae*, *Corvidae*, *Icteridae*, *Fringillidae*, *Vireonidae*, *Mniotiltidae*, *Troglodytidae*, *Mimidae*.]
339. NEUMANN, O. Beiträge zur Vogelfauna von Ost- und Central-Afrika. Die von mir auf meiner Expedition durch die Massai-Länder und in den Ländern am Victoria Nyansa 1892-1895 gesammelten und beobachteten Vögel. III Teil. J. Ornith. 1900, pp. 185-228, 253-313, Tafel i, ii, mit Karte. [*Indicatores*, *Pici*, *Upupe*, *Colii*, *Muscicapidae*, *Sturnidae*, *Ploceidae*, *Fringillidae*, *Pycnonotidae*, *Nectariniidae*, *Sylviidae*, *Turdidae*.]
340. NEWNHAM, T. On the nesting of the Little Gull in the Province of Riazan, Russia. Bull. B. O. C. xi, p. 31. [*Lariformes*.]
341. NEWTON, A. The Great Shearwater in Scottish Waters. Ann. Scott. Nat. Hist. 1900, pp. 142-147. [*Procellariiformes*.]
- 341A. NEWTON, E. T. Additional notes on the Vertebrate Fauna of the Rock-fissure at Ightham (Kent). Quart. J. Geol. Soc. 55 [1899], pp. 419 & 420, pl. xxviii.

342. NISSE, E. Note Ornitologiche per la Provincia di Venezia (Grallae et Palmipedes). *Atti Mus. Milano* xxxix, pp. 155-170.
343. NITSCHER-THARANDT, H. Bemerkungen über das Vorkommen des schwarzbünchigen Wässerschmätzers und einiger anderer seltenerer Vögel im Königreiche Sachsen. *SB. Ges. Isis* 1900, pp. 32-35. [*Cinclus*.]
344. NOBLE, H. The Bearded Tit and other Birds in Norfolk. *Zoologist* 1900, pp. 422 & 423.
345. —. On the breeding of *Chettus cumbutus* and *Oreocichla varia*. [*Cypedi*, *Turdide*.]
346. NORDLING, E. Fågelfaunan i Enare socken. Ett bidrag till Kannedomen om Lappmarkens Fågelfauna. Med ett tillägg af B. Poppius och A. W. Granit. *Acta Soc. Faun. Fenn.* xv, No. 3, pp. 1-98.
347. NORTH, A. J. A list of Insectivorous Birds of New South Wales. *Agric. Gaz. N. S. W.* xi, pp. 1 & 2, pl. xi. [*Timeliide*, *Corvide*.]
348. —. Description of a new bird from North-west Australia. *Victorian Natural* xvii, pp. 78 & 79. [*Timeliide*.]
349. —. Description of a new Parrakeet from the Burke District, North Queensland. *T. c.* pp. 91-93. [*Psittaci*.]  
Additional Note. *T. c.* pp. 113 & 114.
350. —. Description of the nest and eggs of the Painted Honey-eater (*Entomophila picta* Gould). *T. c.* p. 127. [*Meliphagide*.]
351. NORTON, A. H. On the perfected plumage of the King Eider (*Somateria spectabilis*). *Auk* xvii, pp. 16-18. [*Anseriformes*.]
352. OATES, E. W. On a new species of *Trochilopterus* from the Shan States. *Bull. B. O. C.* xi, pp. 10 & 11. [*Timeliide*.]
353. —. General Subject Index to the "Ibis" 1859-1894. 8vo, 140 pp.
354. OBERHOLSER, H. C. Notes on birds collected by Doctor W. L. Abbott in Central Asia. *P. U. S. Mus.* xxii, pp. 205-228. [*Charadriiformes*, *Accipitriformes*, *Turdide*, *Fringillide*, *Hirundinide*.]
355. —. Notes on some birds from Santa Barbara Islands, California. *T. c.* pp. 229-234.
356. —. Catalogue of a collection of birds from Madagascar. *T. c.* pp. 235-248.
357. —. A New Wren from Alaska. *Auk* xvii, pp. 25 & 26. [*Troglodytidae*.]
358. —. A further note on the Specific name of *Fulco regulus*. *T. c.* p. 173. [*Accipitriformes*.]
359. —. The Flamulated Screech Owls *Megascops flammeolus* (Kaup) and *Megascops flammeolus idahoensis* Merriam. *Ornis* x, pp. 23-38. [*Strigiformes*.]  
OLDHAM, C. [See COWARD, T. A. (110).]  
OLIVE, E. [See ROBINSON, H. C. & LAVEROCK, W. S. (423).]
360. OSBORN, H. F. Reconsideration of the evidence for a common Dinosaur-Avian Stem in the Permian. *Dinosaur contributions*, No. 4. *Amer. Natural* xxxiv, pp. 777-799, figs. 1-12.
361. OUSTALET, E. Note sur l'*Estrelata fax*, Procellarien des Iles du Cap-Vert. *Bull. Mus. Paris* 1900, No. 4, pp. 167-170. [*Procellariiformes*.]

362. [OUSTALET, E.] Note sur le mâle de l'*Uratelornis chimera*. Bull. Mus. Paris 1899, No. 6, pp. 280-282. [*Coraciiformes*.]
363. —. Notes sur la Longévité des oiseaux. Orn. x, p. 62. [*Galliformes*, *Grues*, *Ciconiiformes*, *Anseriformes*, *Casuariiformes*.]  
— [See also PREVOST, F. (381).]
- 363A. —. Note sur une particularité de la patte chez les Manchots. Bull. Mus. Paris 1900, pp. 218-222. [*Sphenisciformes*.]
- 363B. —. Catalogue des Oiseaux rapportés par la Mission de Bonchamps. T. c. pp. 222-227. [*Laniidae*.]
364. PALMER, T. S. Legislation for the protection of birds other than Game birds. Bull. U. S. Dep. Agric. Biol. No. 12, pp. 1-94, pls. i, ii, [maps].
- 364A. PALMER, W. Ecology of the Maryland Yellow-throat and its relatives. Auk xvii, pp. 216-242. [*Mniotiltidae*.]
365. PARKIN, T. On the abundance of bird-life in the Southern Ocean. Bull. B. O. C. x, p. cvi.
366. PATTEN, C. J. The Natural History of the Ruff (*Machetes pugnax*). Irish Natural. ix, pp. 187-209, pl. 6. [*Charadriiformes*.]
367. —. On the distribution of some birds observed in Ireland and Switzerland. Zoologist 1900, pp. 213-228.
368. PATTERSON, A. The birds of Great Yarmouth and the neighbourhood. Zoologist 1900, pp. 153-172.
369. —. Migration notes from Great Yarmouth. T. c. pp. 324-326.
370. —. The birds of Great Yarmouth and the neighbourhood. T. c. 397-415, 529-535.
371. PARROT, C. "*Phylloscopus rufus sylvestris*" Meisner, und die Verbreitung der Laubvogelarten in der Schweiz. J. Ornith. 1900, pp. 455-458. [*Sylviidae*.]
372. PEARSON, H. J. *Anser erythropus* breeding in North Norway. Bull. B. O. C. x, p. xli. [*Anseriformes*.]
373. PEEL, C. V. A. Somaliland, being an account of two Expeditions into the Far Interior, together with a complete list of every animal and bird known to inhabit that country, and a list of the reptiles collected by the author. London, 1900, 8vo, xviii, 345 pp. Appendix. Birds, pp. 305-333.
374. PEITEN, W. Das Vogelleben im Elbethale des deutschböhmisches Mittelgebirges. J. Ornith. 1900, pp. 377-420.
375. —. Auffallende Frühjahrs-Erscheinungen in der Orn. des deutschböhmisches Mittelgebirges. Ornith. Monber. viii, pp. 87 & 88.
376. PETIT, L. Sur la présence simultanée au Congo de l'*Hirundo cucullata* Bodd. et de l'*Hirundo rustica* L. Orn. x, pp. 51 & 52. [*Hirundinidae*.]
- 376A. PHILLIPS, R. The Masked Grassfinch (*Poephila personata*). Avicult. Mag. vi, pp. 259-262, pl. iv. [*Ploceidae*.]
377. PIGOTT, T. D. On the Birds of S. Vincent, W.I. Bull. B. O. C. x, p. lvii.
378. POPHAM, H. L. On birds from the Yenessi Valley. [*Fringillidae*, *Charadriiformes*.]  
POPPIUS, B. [See NORDLING, E. (346).]

379. PORTER, L. H. Newfoundland Notes. *Auk* xvii, pp. 71-73.
380. [PRENTISS, D. W.] Obituary. *Auk* xvii, pp. 91 & 92.
381. PREVOST, F. Observations sur le régime alimentaire des oiseaux avec notes et remarques par E. Oustalet. *Ornis* x, pp. 121-158.
- 381A. PRICE, W. W. Some winter birds of the Lower Colorado Valley. *Bull. Cooper Ornith. Club* i, pp. 89-93.
- 381B. PYCRAFT, W. P. The Story of Bird Life. London, 1900, 12mo, 244 pp.
382. —. A contribution towards our knowledge of the Pterylography of the Megapodii. Willey's Zoological Results, Part iv, pp. 483-492, pl. xlix. [*Galliformes*.]
383. —. On the palate of *Caprimulgidae*. *Bull. B. O. C.* xi, pp. 12 & 13. [*Caprimulgi*.]
384. —. On *Zeledonia*. *T. c.* p. 12. [*Turdidae*.]  
 —. [See also ROTHSCHILD, W. (431).]  
 QUELCH, J. J. [See SHARPE, R. BOWDLER (491).]
385. RACOVITZA, E. G. Expedition Antarctique Belge. La vie des animaux et des plantes dans l'Antarctique. *Bull. Soc. Belge Geol.* 1900, pp. 16-28. [*Sphenisciformes*, *Procellariiformes*.]
386. RASPAIL, X. Durée de l'incubation et de l'éducation des jeunes chez le bouvreuil. *Ornis* x, pp. 65-70.
387. READ, R. H. Cuckoo's egg in a Song-Thrush's nest. *Zoologist* 1900, pp. 520 & 521. [*Cuculi*.]
388. REGALIA, E. Unghe ai diti I e II della Mano in Uccelli italiani e in altri. *Nota* IV. *Atti Soc. Toscana* xii, pp. 111-127.
389. REICHENOW, A. Die Vögel Afrikas. Erster Band. Neudamm, 1900-1901, 8vo, xcvi, 320 pp.
390. —. Über den Wanderzug des Tannenhebers. *J. Ornith.* 1900, p. 244. [*Corvidæ*.]
391. —. On *Diomedea platei*. *T. c.* pp. 244 & 245. [*Procellariiformes*.]
392. —. On a new genus and species of Weaver-bird. *T. c.* p. 249. [*Ploceidae*.]  
 —. On a new subspecies of Kingfisher. *T. c.* p. 249. [*Halcyones*.]
393. —. Zur Thierverbreitung in Afrika. II [Cf. *Zool. Rec. Aves*, p. 27]. *Ornith. Monber.* viii, pp. 4-6. [*Columbiformes*, *Charadriiformes*, *Accipitriformes*, *Cuculi*, *Capitones*, *Muscicapidae*, *Motacillidae*, *Nectariniidae*, *Turdidae*, *Paridae*.]  
 —. Zwei neue Arten von Kamerun. *T. c.* p. 6. [*Turdidae*, *Sylviidae*.]
394. —. Über Sylviella-Arten. *T. c.* pp. 21 & 22. [*Sylviidae*.]
395. —. Neue-Forschungen in Deutsch-Ostafrika. *T. c.* pp. 38-40. [*Laniidae*, *Motacillidae*, *Alaudidae*, *Ploceidae*, *Galliformes*.]
396. —. *Barbatula centralis*, n. sp. *T. c.* p. 40. [*Capitones*.]
397. —. *Estrilda warwiltzi*, n. sp. *T. c.* p. 40. [*Ploceidae*.]
398. —. Ueber *Mesopicos goertze* und Verwandte. *T. c.* pp. 58 & 59. [*Pici*.]

399. [REICHENOW, A.] Über *Scops* Sav. und *Pisorhina* Kaup. T. c. p. 68. [*Strigiformes*.]
400. —. Über *Melittophagus cyanostictus* und Verwandte. T. c. pp. 86 & 87. [*Meropes*.]
401. —. Neues aus Deutsch-Ostafrika. T. c. pp. 98–100. [*Caprimulgi*, *Muscicapide*, *Eulabidae*, *Ploceide*, *Turdide*.]
402. —. Drei fernere von Hrn. D. Fülleborn entdeckte Vogelarten. T. c. pp. 122 & 123. [*Muscicapide*, *Fringillide*, *Sylviide*.]
403. —. Ueber einen neuen Regenpfeifer von Südwestafrika. T. c. pp. 122 & 123. [*Charadriiformes*.]
404. —. Ueber den Gattungsnamen *Gavia*. T. c. pp. 135 & 136. [*Lariformes*, *Columbiformes*.]
405. —. Zwei neue arten von den Tschakosinseln. T. c. pp. 140 & 141. [*Columbiformes*, *Ardeiformes*.]
406. —. Neue arten vom südöstlichen Neuguinea und Nordqueensland. T. c. pp. 185–188. [*Accipitriformes*, *Psittaci*, *Cuculi*, *Halcyones*, *Campophagide*, *Prionopidae*, *Certhiide*.]
- 406A. REICHENOW. Über die Lebensweise der Vögel Spitzbergens. Ornith. Monber. viii, pp. 100 etc.
407. RENSCHAW, G. Birds of Paradise. Nature Notes xi, pp. 164–167.
408. RICHMOND, C. W. Description of a new bird of the genus *Dendroornis*. P. U. S. Mus. xxii, pp. 317 & 318. [*Dendrocolaptide*.]
409. —. Descriptions of three new birds from Lower Siam. T. c. pp. 319–321. [*Nectariniide*, *Timeliide*, *Pycnonotide*.]
410. —. Some necessary changes in Nomenclature. Auk xvii, pp. 178 & 179. [*Capitones*, *Pici*, *Mniotiltide*, *Pycnonotide*, *Formicuriide*, *Tinamiformes*.]
411. —. Further notes on Lacépède's 'Tableaux.' T. c. pp. 166 & 167.
412. RICKETT, C. B. On a new species of *Scops* from Fohkien, China. Bull. B. O. C. x, p. lvii. [*Strigiformes*.]
413. —. Additional Notes on the Birds of Fohkien. Ibis 1900, pp. 52–60.
414. —. Destruction of Herons in China. T. c. pp. 217–219.
415. RIDGWAY, R. New Species, etc., of American Birds.—v. Corvidæ.—(Concluded.) Auk xvii, pp. 27–29. [*Corvidæ*.]
416. —. New Species, etc., of American Birds.—vi. Fringillidæ (Supplement). T. c. pp. 29 & 30. [*Fringillide*.]
417. RIDLEY, H. N. Birds in the Botanic Gardens, Singapore. J. Straits Asiat. Soc. No. 31, pp. 73–89.
418. RIDSDALE, E. L. J. The Bearded Titmouse: a Correction. Zoologist 1900, p. 422. [*Paridae*.]
419. RIPPON, G. [C.]. On new species from the Southern Shan States. Bull. B. O. C. xi, pp. 11 & 12. [*Paride*, *Timeliide*.]
420. ROBERTS, T. S. An account of the nesting habits of Franklin's Rosy Gull (*Larus franklinii*) as observed at Heron Lake in South-eastern Minnesota. Auk xvii, pp. 272–283, pls. ix, x, xi. [*Lariformes*.]

421. ROBINSON, H. C. On a new species of *Turnix* from North Queensland. Bull. B. O. C. x, p. xliii. [*Turniciformes*.]
422. —. Contributions to the Zoology of North Queensland. Bull. Liverp. Mus. ii, pp. 115 & 116. [*Psittaci, Halcyones*.]
423. — & LAVEROCK, W. S. The Birds of North Queensland. Part i. On two collections from Cooktown and the Neighbourhood of Cairns. With Field-notes by E. Olive. Ibis 1900, pp. 617–653. [*Oriolidae, Nectariniidae, Meliphagidae, Halcyones, Psittaci*.]  
— [See also FORBES, H. O. (165).]
424. ROCQUIGNY-ADANSON, G. DE. Le Retour du Lorient dans le centre de la France. Ornith. Monber. x, pp. 53–61.
425. RÖMER, F. & SCHAUDINN, F. Ueber die Lebensweise der Vögel Spitzbergens. Ornith. Monber. viii, pp. 100–107, 116–121, 136–139.
426. ROMITA, V. DE. La Terra di Bari. III. Materiali per una fauna Barese. Uccelli, pp. 247–324.
427. ROTH, —. Über die Fusshaltung fliegenden Möven. Ornith. Monber. viii, p. 156. [*Lariformes*.]
428. ROTHSCHILD, N. C. Notes on *Pulex avium* Taschenberg. Nov. Zool. vii, pp. 539–543.
429. —. On birds observed on the Upper Nile. Bull. B. O. C. x, p. c. [*Ardeiformes*.]
430. ROTHSCHILD, W. The Avifauna of Laysan and the neighbouring islands; with a complete history to date of the Birds of the Hawaiian Possessions. Illustrated with 25 coloured plates and 2 black plates by Messrs Keulemans and Frohawk. London, 1900, 4to, Part III, pp. xx, 127–320, 27 pls. [*Drepanidae, Fringillidae, Meliphagidae, Ralliformes, Charadriiformes, Anseriformes, Pelecaniformes, Muscipidae*.]  
List of birds introduced into the Sandwich Islands, pp. 299 & 300. Birds erroneously reported to occur on the Sandwich Islands, p. 301. Additions, Supplements, and Corrections to Parts I & II of this work, pp. 302–312. Complete List of the Birds known from the Hawaiian Possessions, pp. 313 & 314. List of Birds known from the various islands, pp. 315–317. Résumé of Palmer's Diary, pp. 1–21.
431. —. A monograph of the genus *Casuarinus*. With a Dissertation on the Morphology and Phylogeny of the Palæognathæ (*Ratite* and *Crypturi*) and Neognathæ (*Carinata*) by W. P. Pycraft. Tr. Zool. Soc. London xv, Part v, pp. 109–290, pls. xxii–xlv. [*Casuariiformes*.]
432. —. On the *Lalage* of Samoa. Bull. B. O. C. x, p. xl. [*Campophagidae*.]
433. —. On *Cracticus rufescens*. T. c. p. xl. [*Laniidae*.]
434. —. On *Geocichla papuensis*. T. c. p. xlv. [*Turdidae*.]
435. —. On *Aquila fulvescens* and its allies. T. c. pp. li & lii. [*Accipitriformes*.]
436. —. On *Phalacrocorax chalconotus*. T. c. pp. lii & liii. [*Phalacrocoracidae*.]
437. —. *Urubitinga urubitinga* in the *Steutornis* cave in Venezuela. T. c. p. liii. [*Accipitriformes*.]
438. —. On *Otocorys balcanica*. T. c. p. liii. [*Alaudidae*.]

439. [ROTHSCHILD, W.] On the flight of *Burnesia gracilis*. T. c. p. c. [*Sylviidae*.]
440. —. A new species of *Parotia*. T. c. p. c. [*Paradisidae*.]
441. —. On rare birds from the Ambernoh River, Dutch New Guinea. T. c. p. ci. [*Psittaciiformes*, *Muscicapidae*.]
442. —. Eggs of *Bubo ascalaphus*. Op. cit. xi, p. 10.
443. —. *Diphyllodes gulelmi tertii*. Its habitat. T. c. p. 30. [*Paradisidae*.]
444. —. A new species of *Grallaria* from N. Ecuador. T. c. pp. 36 & 37. [*Formicariidae*.]
445. — & HARTERT. On a new species of Crow from the Sula Islands. T. c. pp. 29 & 30. [*Corvidae*.]
446. — & —. New species of Birds from New Guinea. T. c. pp. 25 & 26. [*Timeliidae*, *Muscicapidae*.]
447. —. Note on *Amalocichla brevicauda* (De Vis). T. c. pp. 26 & 27.
448. [RUSS, K.] Obituary. Zoologist 1900, p. 81.  
SAINTÉ-SUZANNE, COMTE DE. [See DROUËT, H. (137).]
449. SALTER, J. H. Ornithological notes from Mid-Wales. Zoologist 1900, pp. 76-79.
450. SALVADORI, T. Elenco degli Scritti. Torino, 1900, 4to, 16 pp.
451. —. Contribuzione all' Avifauna dell' America Australe (Patagonia, Tierra del Fuoco, isola degli Stati, isole Falkland). Ann. Mus. Genova (2) xx, pp. 609-634.
452. —. On *Æstelata mollis* (Gould) and the allied species living at Madeira and the Cape Verde Islands. Ibis 1900, pp. 298-303. [*Procellariiformes*.]
453. —. Notes on *Oriolus meneliki* and *Sporæginthus margaritæ*. T. c. pp. 397-399. [*Oriolidae*, *Fringillidae*.]
454. —. On the Ibises of the genus *Theristicus*. T. c. pp. 501-517, pls. ix & x. [*Ardeiformes*.]
455. —. On some additional species of the genus *Pyrrhura*. T. c. pp. 667-674, pl. xiv. [*Psittaci*.]
456. — & FESTA, E. Viaggio del Dr Enrico Festa nell' Ecuador. Parte Terza. Trochili—Tinami. Boll. Mus. Torino xv, No. 368, pp. 1-54. [*Pici*, *Trogonæ*, *Strigiformes*.]
457. SALVIN, O. & GODMAN, F. D. Biologia Centrali-Americana: or contributions to the knowledge of the fauna and flora of Mexico and Central America. London, 1900, 4to, Aves, vol. iii, pts. clix, clx, pp. 57-72, 73-88, pl. lxiii. [*Accipitriformes*.]
458. SAMUEL, I. HUGHES. List of rarer birds met with during the spring of 1900 in the immediate vicinity of Toronto. Auk 1900, pp. 391 & 392. [*Mniotiltidae*, *Icteridae*.]
459. SAPSWORTH, A. D. On *Sitta whiteheadi* and *Cinclus melanogaster* in Corsica. Bull. B. O. C. xi, p. 12. [*Sittidae*, *Cinclidae*.]  
SAUNDERS, E. [See SHARPE, R. BOWDLER (490).]
460. SAUNDERS, H. Pectoral Sandpiper in Ireland. Bull. B. O. C. xi, p. 34. [*Charadriiformes*.]
- 460A. —. Curlew breeding in Surrey. T. c. p. 34. [*Charadriiformes*.]



461. SAUNDERS, W. E. Nesting habits of the Cerulean Warbler. *Auk* xvii, pp. 358-362. [*Mniotiltidae*.]
462. SAXBY, T. E. Ornithological notes from Shetland. *Zoologist* 1900, p. 281. [*Lariformes*.]
463. SCHAFFER, P. A. Ankunft und Abzug der Zugvögel in Mariahof in Stiermark vom Jahre 1840-1899. *Ornith. Jahrb.* xi, pp. 132-152.
464. SCHALOW, H. On the distribution of *Buteo zimmermannæ* and allies in Germany. *J. Ornith.* 1900, p. 249. [*Accipitriformes*.]
465. —. Bernard Altum. Nachruf. *Ornith. Monber.* viii, pp. 49-54.
466. —. Ueber *Muscisaxicola garretti* Scott. *T. c.* pp. 113 & 114. [*Tyrannidae*.]
467. SCHAUBERG, R. BARON SNOUCKAERT VAN. Ornithologie van Nederland waarnemingen van 1 mei 1899 tot en met 30 April 1900 gedaan. *Tijdschr. Nederland. Dierk. Ver.* (2) vi, pp. 255-283.
468. —. Zwei neue Vögel für Holland. *Ornith. Monber.* viii, pp. 17-19. [*Anatidae, Turdidae*.]
469. —. Ornithologisches aus Holland. *T. c.* pp. 113-116.  
SCHAUDINN, F. [See RÖMER, F. (425).]
470. SCHMITZ, P. E. Zur Ornithologie der Insel Madeira. *Ornith. Jahrb.* xi, pp. 218-221.
471. SCHREINER, K. E. Beiträge zur Histologie und Embryologie des Vorderdarmes der Vögel. I. Vergleichende Morphologie des feineren Baues. Mit Tafel xxxiii-xxxviii und ii Figuren im Text. *Zeitschr. wiss. Zool.* lxxviii, pp. 481-580.
472. SCHREINER, S. C. CROWWRIGHT. The Pairing and Incubation of the Ostrich. *Ibis* 1900, pp. 219 & 220. [*Struthioniformes*.]
473. SCHULZ, W. A. Zur Kenntnis der Fortpflanzung von *Cassidix orizivora* Scl. *J. Ornith.* 1900, p. 242. [*Icteridae*.]
474. —. Die Wiederentdeckung von *Pipru opalians* Pelz. *T. c.* pp. 242 & 243. [*Pipridae*.]
475. —. Beitrag zur Fortpflanzungsgeschichte von *Brotogerys virescens*. *Ornith. Monber.* viii, pp. 56 & 57. [*Psittaciformes*.]
476. SCLATER, P. L. A list of birds collected at Fort Jameson in Mpeseni's country in Northern Rhodesia, determined by Capt. G. E. Shelley. *P. Zool. Soc. London* 1900, pp. 1-3. [*Paridae, Capitonidae, Pelecaniformes*.]
- 476A. [—.] Avium Generum Index Alphabeticus. An Alphabetical Index to the Genera adopted in the twenty-seven volumes of the Catalogue of the Birds in the British Museum. *Bull. Ornith. Club* vol. ix, 1899, 8vo, 31 pp.
477. —. Chairman's Annual Address to the B. O. C. xi, pp. 18-25, Addendum, pp. 34 & 35.
478. —. On the Society for the Protection of Birds. *Bull. B. O. C.* x, p. lviii.
479. —. On the Expedition of Messrs Goodfellow and Hamilton to Ecuador. *T. c.* pp. lviii & lix.
480. SCOTT, W. E. D. On the breeding of *Chatura pelagica*. *Bull. B. O. C.* x, p. liv. [*Cypseli*.]

481. [SCOTT, W. E. D.] On new species of *Tyrannidae* from Patagonia. T. c. pp. liv & lv. [*Tyrannidae*.]
482. —. On new species of Birds from Patagonia. T. c. pp. lxii-lxiv. [*Formicariidae*, *Tyrannidae*, *Fringillidae*.]
483. SEEBOHM, H. A monograph of the *Turdidae* [q. v.]. Edited and completed (after the Author's death) by R. Bowdler Sharpe. Pts. viii, ix, x.
484. SELOUS, E. An observational diary of the habits of the Great Plover (*Odicnemus crepitans*) during September and October. Zoologist 1900, pp. 173-185, 270-277, 458-476. [*Charadriiformes*.]
485. SELOUS, F. C. A Fortnight's Egg-collecting in Asia Minor. Ibis 1900, pp. 405-424.
486. [SENNETT, G. B.] Obituary. Auk xvii, p. 193.
487. SERVICE, R. Ornithological notes from Solway. Ann. Scott. Nat. Hist. 1900, pp. 120 & 121.
- 487A. SETH-SMITH, D. The Sacred Kingfisher (*Halcyon sancta*). Avicult. Mag. vi, pp. 117-119, pl. i. [*Halcyones*.]
- 487B. —. The Long-tailed Grassfinch (*Poephila acuticauda*). T. c. pp. 257-259, pl. iv. [*Ploceidae*.]
488. SHARPE, R. BOWDLER. A Hand-List of the Genera and Species of Birds (Nomenclator Avium tum fossilium tum viventium). Vol. ii, 8vo, London, 1900, pp. xv, 312. [*Psittaciformes*, *Coraciiformes*, *Caprimulgi*, *Cypseli*.]
489. —. A monograph of Christmas Island (Indian Ocean) Aves. Pp. 37-50, pls. iii-vi. [*Pelecaniformes*, *Strigiformes*, *Accipitriformes*, *Zosteropidae*.]
490. —. On the birds collected during the Mackinder Expedition to Mount Kenya. With notes by H. J. Mackinder, Ernest Saunders, and C. Camburn. P. Zool. Soc. London 1900, pp. 596-609, pl. xliii. [*Strigiformes*, *Coli*, *Timeliidae*, *Muscicapidae*.]
491. —. Report on a collection made by Messrs F. V. McConnell and J. J. Quelch at Mount Roraima in British Guiana. Tr. Linn. Soc. London (2) Zool. viii. Part 2. Birds p. 53, pl. 4. [*Fringillidae*.]
492. —. On a Collection of Birds obtained by Mr H. S. H. Cavendish in Mozambique. Ibis 1900, pp. 109-115. [*Ploceidae*, *Muscicapidae*, *Hirundinidae*.]
493. —. On a collection of birds made by Captain A. M. Farquhar, R.N., in the New Hebrides. T. c. pp. 337-351, pl. vii. [*Halcyones*, *Cuculi*, *Muscicapidae*, *Laniidae*, *Zosteropidae*, *Columbiformes*.]
494. —. On new birds from Mount Kenya. Bull. B. O. C. x, pp. xxxv & xxxvi. [*Ploceidae*, *Turdidae*, *Piciformes*.]
495. —. *Puffinus yelkouanus* near Bridlington. T. c. p. xlviii. [*Procellariiformes*.]
496. —. On new species of *Merops* from W. Africa. T. c. p. xlviii & xlix. [*Meropes*.]
497. —. On birds from the French Congo. T. c. pp. lv & lvi. [*Strigiformes*, *Ralliformes*.]
498. —. On the habitat of *Astur jardinei*. T. c. p. lvi. [*Accipitriformes*.]

499. [SHARPE, R. BOWDLER.] New species from British East Africa. T. c. pp. ci & cii. [*Alaudidae*, *Ploceidae*.]
500. —. Notes on the Third International Ornithological Congress at Paris. Op. cit. xi, p. 2.
501. —. On a new species of *Tatara* from Pitcairn Island. T. c. p. 2. [*Sylviidae*.]
502. —. On new birds from S. America. T. c. p. 2. [*Tanagridae*, *Formicariidae*.]
503. —. New species of African Birds. T. c. pp. 28 & 29. [*Laniidae*, *Sylviidae*, *Turdidae*, *Timeliidae*, *Pycnonotidae*.]  
 —. [See also SEEBOHM, H. (483), SHERBORNE, C. D. (507), WHITE, GILBERT (558).]
504. SHELFORD, R. On the Pterylosis of the Embryos and Nestlings of *Centropus sinensis*. Ibis 1900, pp. 654-667, pl. xiii. [*Cuculi*.]
505. —. The birds of Mount Penrissen and Neighbouring District. J. Straits Asiat. Soc. No. 33, pp. 10-21. [*Muscicapidae*, *Halcyonae*.]
506. SHELLEY, G. E. The Birds of Africa. London, 1900, Roy. 8vo. Vol. II, Part i, 160 pp., vii pls. Vol. II, Part ii, viii, 161-348 pp. viii-xiv pls. [*Nectariniidae*, *Paridae*, *Ploceidae*, *Laniidae*, *Zosteropidae*, *Cypseli*.]
507. SHERBORNE, C. DAVIES. Bibliography of Gilbert White's Nat. Hist. of Selborne in Sharpe's edition of Gilbert White's 'Selborne,' ii, pp. 349-364.
508. SHUFELDT, R. W. Professor Collett on the morphology of the cranium and the auricular openings in the North-European species of the family *Strigidae*. J. Morphol. xvii, pp. 119-176, pls. xvii-xx. [*Strigiformes*.]
509. —. On the Osteology of the Woodpeckers. P. Amer. Phil. Soc. xxxix, No. 164, pp. 578-622, pl. ix. [*Pici*.]
510. —. On the Osteology of the Striges (*Strigidae* and *Bubonidae*). T. c. pp. 665-722, pls. x-xvii. [*Strigiformes*.]
511. —. On the systematic position of the Sand Grouse (*Pterocles, Syrrhaptes*). Amer. Natural. xxxiv, pp. 11-16, cum fig. [*Pteroclidiformes*.]
512. —. The Ornithological results of the Polar Expedition under Dr Nansen. T. c. pp. 417-420.
513. —. Notes on the Mountain Partridge (*Oreortyx pictus*) in captivity. Ornith. x, pp. 71-76, pl. i. [*Galliformes*.]
514. —. A remarkable growth on the bill of a Curlew (*Numenius arquatus*). T. c. pp. 477-479. [*Charadriiformes*.]
- 514A. —. On the scientific photography of birds' eggs. Condor ii, pp. 75-78, figs. 1-9.
515. SIM, G. Black Redstart at Aberdeen. Ann. Scott. Nat. Hist. 1900, p. 121. [*Turdidae*.]
516. SIMPSON, A. N. Contribution to the Ornithology of Kincardineshire. Ann. Scott. Nat. Hist. 1900, pp. 147-153, 197-202.
517. SLATER, H. H. The birds of Northamptonshire and neighbourhood. Report for 1898. J. Northampt. Soc. x, pp. 171-177.

518. SNYDER, J. O. Notes on a few species of Idaho and Washington Birds. *Auk* xvii, pp. 242-245.
519. STARK, A. C. The Birds of South Africa. Vol. I, with map and illustrations. London, 1900, 8vo, xxx, 322 pp., 80 figg. in text.
520. [—]. Obituary. *Ibis* 1900, p. 220.
521. STEELE-ELLIOTT, J. Nesting of the Great Tit (*Parus major*), the Common Sparrow (*Passer domesticus*), and the Starling (*Sturnus vulgaris*). *Zoologist* 1900, pp. 423-426. [*Paridae*, *Fringillidae*, *Sturnidae*.]
522. —. Some notes on the Swift (*Cypselus apus*). T. c. pp. 479-481. [*Cypseli*.]
523. STONE, W. Report on the Birds and Mammals collected by the McIlhenny Expedition to Pt. Barrow, Alaska. P. Ac. Philad. 1900, Birds, pp. 4-33.
524. SUPINO, F. Ricerche sulla struttura del polmone negli Uccelli. *Atti Soc. Veneto-Trent* (2) iii, pp. 306-314.
525. SUSCHKIN, P. Systematische Ergebnisse osteologischer Untersuchungen einiger Tagraubvögel. *Zool. Anz.* xxiii, pp. 269-277. [*Accipitriiformes*.]
526. —. Weitere systematische Ergebnisse vergleichend-osteologischer Untersuchungen der Tagraubvögel. T. c. pp. 522-528.
527. —. Zur Morphologie des Vogelskelets. I. Schädel von *Tinnunculus*. *Mem. Soc. Moscou* xvi, pp. 1-163, Taf. i-vi. [*Accipitriiformes*.]
528. —. Die Vögel des kirgisischen Steppengebiets. *J. Ornith.* 1900, pp. 139-151.
529. —. On the Russian species of Jerfalcon. *Bull. B. O. C.* xi, pp. 3-5. [*Accipitriiformes*.]  
 —. On *Lanius eleagni*, Sushkin. T. c. p. 5. [*Laniidae*.]  
 —. On a new species of Merlin. T. c. p. 5. [*Accipitriiformes*.]
530. —. On the species of *Aquila*. T. c. pp. 6-10. [*Accipitriiformes*.]
531. —. Remarks on *Lophotriorchis lucani*. T. c. p. 31. [*Accipitriiformes*.]
532. SWAIN, J. M. Prairie Horned Larks nesting in Maine. *Auk* xvii, pp. 387 & 388. [*Alaudidae*.]
- 532A. SWARTH, H. S. Avifauna of a 100-acre Ranch. *Condor* ii, pp. 14-16, 37-41.
533. TALSKEY, J. Die ornithologische Versammlung in Sarajevo. *Ornith. Jahrb.* xi, pp. 1-24, 47-62.
534. TEGETMEIER, W. B. On the breeding of *Phasianus colchicus* in October. *Bull. B. O. C.* xi, p. 15. [*Galliformes*.]
535. —. Varieties of the Partridge. T. c. p. 30. [*Galliformes*.]
536. —. On *Otis denhami*. T. c. p. 41. [*Otides*.]
537. TERNIER, L. Distribution géographique en France du Vanneau huppé (*Vannellus cristatus*) d'après les données de l'enquête territoriale de 1885 et 1886. *Ornis* x, pp. 77-96.
538. —. Étude sur les passages en France du Pluvier doré (*Charadrius pluvialis*) migration et distribution géographique d'après les données de l'enquête territoriale de 1885 et 1886. T. c. pp. 97-118. [*Charadriiformes*.]

529. [TESSIER, L.] Note sur les migrations et la distribution géographique en France de la Grue cendrée *Grus cinerea* d'après les données de l'enquête territoriale de 1965 et 1966. T. c. pp. 205-211. [*Grues*.]
540. —. Notice sur la distribution géographique et les migrations en France de la Cigogne blanche *Ciconia alba* d'après les données de l'enquête territoriale de 1965 et 1966. T. c. pp. 213-237.
541. THAYER, A. H. Arguments against the Banner Mark theory. Auk xvii, pp. 106-113.
542. THAYER, G. H. The European Linnet in Westchester County, New York. Auk xvii, pp. 368 & 369. [*Fringillidae*.]
543. THÉBAULT, V. Note sur l'existence d'une veine cave accessoire normale chez les Oiseaux. Bull. Soc. zool. France xiv, pp. 67-69, figg. 1 & 2.
544. TICEHURST, N. F. Some remarks on the birds seen in the south-east part of the mainland of Orkney in October, 1899. Zoologist 1900, pp. 54-64.
545. —. Occurrence of the Water Pipit (*Anthus spinoletta*) in Sussex. T. c. p. 278.
546. —. Breeding of the Shoveler (*Spatula clypeata*) and Garganey (*Querquedula ciria*) in Kent. T. c. pp. 279 & 280. [*Anseriformes*.]
- 546A. TODD, R. A. Birds about Buenos Ayres. Avicult. Mag. xi, pp. 150-153.
547. TSCHUSCH ET SCHMIDHOFFER, V. R. vox. Bemerkungen über einige Vögel Madeira's. Ornith. Jahrb. xi, pp. 221-225. [*Motacillidae*, *Fringillidae*.]
548. —. Neuere Nachrichten über den Bartgeier (*Gypaetus barbatus* L.) in Tirol. T. c. pp. 225-227. [*Accipitriformes*.]
549. TURNER, H. H. On a collection of birds from Manipur. J. Asiat. Soc. Bengal (2) lxxviii, pp. 235-245.
550. USSHER, R. J. The Snow-Goose in Ireland. Irish Natural. ix, p. 109. [*Anseriformes*.]
551. — & WARREN, R. The Birds of Ireland, an account of the distribution, migration, and habits of birds as observed in Ireland, with all additions added to the Irish list. Including an introduction and tables showing the distribution of birds in the breeding-season. London, 1900, xxxii, 419 pp.
552. VAUGHAN, R. E. Land birds at Sea. Zoologist 1900, pp. 256-261.
553. VIEIRA, L. Le savon arsénical et sa prétendue action conservatrice des peaux des animaux empaillées. Ann. Sci. nat. Porto vi, pp. 29-32 cum fig.
554. VORDERMAN, A. G. Java-Vogels, II. Natuurk. Tijdschr. Nederl. Ind. lix, pp. 201-233.
555. —. Systematisch overzicht der Vogels welke op Java inheemsch zijn. Van aanteekeningen voorzien door Dr. O. Finsch. Op. cit. lx, pp. 1-120.
556. WAGNER, W. The Town Swallow (*Chelidon urbica*), its industry and life, etc. Mem. Ac. St. Petersburg. (8) x, pp. 1-125, pls. i-vii. [*Hirundinidae*.]
- WARREN, R. [See USSHER, R. J. (551).]

557. WEBER, A. Contribution à l'étude de la métamérie du cerveau antérieur chez quelques oiseaux. Arch. d'Anat. Micr. Paris iii, pp. 369-423, pls. xviii & xix.  
WELD-BLUNDELL, H. [See GRANT, W. R. OGILVIE (186).]
558. WHITE, GILBERT. The Natural History and Antiquities of Selborne, and a Garden Kalendar. Edited by R. Bowdler Sharpe. Vol. ii, 8vo, pp. xvi, 443.
559. WHYTE, W. Bird Life on Sidlaws. Tr. Perthsh. Soc. iii, pp. 55-59.
560. WIGLESWORTH, L. W. A ratiometer. Bull. B. O. C. x, pp. xlv & xlvi.  
— How a bird-skin should be measured. T. c. pp. xlv & xlvi.
561. WILLIAMS, E. Montagu's Harrier in Wicklow. Irish Natural. ix, p. 21. [*Accipitriformes*.]
562. WILLINK, H. D. T. Die Zahnleisten und die Eischwiele bei den Voegeln. Tijdschr. Nederland. Dierk. Ver. (2) vi, pp. 243-254, Taf. xi.
563. WILSON, W. Observations on the Cuckoo in Aberdeen. Zoologist 1900, pp. 481 & 482. [*Cuculi*.]
564. WINGE, H. Fuglene ved de danske Fyr i 1899. 17de Aarsberetning om danske Fugle. Vid. Medd. 1900, pp. 159-227.
565. WITHERBY, H. F. On the birds observed in the Kola Peninsula, Russian Lapland. Ibis 1900, pp. 475-492. [*Charadriiformes*.]
566. —. Two Months on the Guadalquivir. Knowledge xxii, No. 159, pp. 6-9, No. 161, pp. 51-54, No. 166, pp. 183-186, No. 168, pp. 222-224, No. 170, pp. 272-275.
567. —. On the young of *Limosa lapponica* from Russian Lapland. Bull. B. O. C. x, p. xlv. [*Charadriiformes*.]
568. —. On *Caprimulgus eximius*. T. c. p. cv. [*Caprimulgi*.]
569. —. On birds from the White Nile. Op. cit. xi, p. 13. [*Sylviidae*.]
570. WOOD, J. CLAIRE. Brief Michigan Notes. Auk xvii, pp. 390 & 391.
571. WOODRUFFE-PEACOCK, E. A. The Cuckoo: a Study. Naturalist 1900, pp. 99-108. [*Cuculi*.]
572. WOODWARD, R. B. & J. D. S. On the Birds of St. Lucia Lake in Zululand. Ibis 1900, pp. 517-525. [*Muscicapidae*.]
573. WUSTNEI, C. Beobachtungen aus der Ornith. Mecklenburgs im Jahre 1899. J. Ornith. 1900, pp. 314-349.
574. — & CLIDIUS, G. Die Vögel der Grossherzogthümer Mecklenburg. Güstrow, 1900, 8vo, 364 pp.
575. WYATT, C. W. British birds: Vol. II. London, 1899, 4to. 42 pp. 42 pls. [Cf. Zool. Rec. xxxi, Aves, p. 20.]
576. WYATT, H. B. Heronries, past and present, in the Clyde Faunal Area. Tr. Soc. Glasgow (2) v, pp. 378-398. [*Ardeiformes*.]
577. ZARUDNY, N. On an excursion through north-eastern Persia and the birds of that region. Mem. Ac. St. Petersb. (8) x, pp. 55-253.  
— [See also BIANCHI, V. (42).]
578. — & HÄRMS, M. Ueber eine neue Form der Sumpfschneise. Ornith. Monber. viii, pp. 19 & 20. [*Paridae*.]

579. ZEHNTNER, L. De Weervogels in het Sinkerriet op Java *Ploceus manjar* Horsf.; mal manjar. Mededeel. Proefstation Oost-Java n. s. No. 46, 1898, 15 pp., 2 pls.
580. ZEITZ, A. Description of a new species of *Acanthiza* (*A. tenuirostris*). Tr. R. Soc. S. Austral. xxiv, p. 112. [*Timeliidae*.]

## II. SUBJECT INDEX.

### FAUNISTIC.

**Palaearctic Region.** ANDERSEN (9), ARRIGONI (17), ERLANGER (148), GAAL DE GYULA (174), HARMS (216), HARTERT (222), KLEINSCHMIDT (280), KOLLIBAY (284), MADARÁSZ (316), MARTORELLI (321), NORDLING (346), OBERHOLSER (354), Talsky (533), USSHER (551), WARREN (551), WINGE (564), WITHERBY (565), ZARUDNOI (577).

**Ethiopian Region.** ALEXANDER (3), GRANT (186), HARTERT (219), MARSHALL (318), NEUMANN (339), OBERHOLSER (356), PEEL (373), REICHENOW (389), SALVADORI (452), SHARPE (490), SHELLEY (506), STARK (519).

**Indian Region.** BAKER (22), BINGNAM (44), BUTLER (81), BÜTTIKOFER (85), CLARKE (98), FINSCH (160), GRANT (185), LA TOUCHE (290), RICKETT (412), SHARPE (489), SHELFORD (505), VORDERMAN (554).

**Australian Region.** FINSCH (156), HALL (202), HARTERT (217), LAVEROCK (423), LE SOUËF (294), MADARÁSZ (312), NORTH (347), ROBINSON (423), ROTHSCHILD (431), SHARPE (493).

**Nearctic Region.** BISHOP (47), CHAPMAN (91), DWIGHT (142), LOOMIS (300), MACOUN (309), NASH (336), NELSON (337), OBERHOLSER (355), PALMER (364).

Sandwich Islands. ROTHSCHILD (430).

Report of the A. O. U. Committee on Protection of North American Birds. Auk xvii, pp. 51-58.

Seventeenth Congress of the American Ornithologists' Union. Auk xvii, pp. 58-63.

**Neotropical Region.** ALLEN (7), DALMAS (117), EULER (149), FESTA (154A), GOELDI (178A), GODMAN (457), HARTERT (216A), IHERING (267), NELSON (338), SALVADORI (456), SALVIN (457), SHARPE (491).

### ANATOMY AND MISCELLANEOUS.

**Anatomy.** See BURI (78), PYCRAFT (431), SUPINO (524), SUSCHKIN (525).

**Osteology.** See SHUFELDT (509), SUSCHKIN (525).

**Morphology.** See PYCRAFT (431), SHUFELDT (508), SUSCHKIN (527).

**Pterylography.** See BURCHARDT (75), PYCRAFT (382), SHELFORD (504).

**Colour-change.** See BONHOTE (53), DWIGHT (144).

**Incubation.** See RASPAIL (386).

**Nesting and Oology.** See LE SOUËF (294).

**Fossil Birds.** See LUCAS (303).

**Bibliography.** See SHERBORNE (507).

**Migration.** See BLASIUS (49), DEICHLER (126), GAAL DE GYULA (174), HELM (248), SCHAFFER (463), TERNIER (538), USSHER (551), WARREN (551).

**Bird Migration in Great Britain and Ireland.** Second Interim Report of the Committee, consisting of Professor NEWTON (*Chairman*), the late Mr JOHN CORDEAUX (*Secretary*), Mr HARVIE-BROWN, Mr R. M. BARRINGTON, Rev. E. PONSONBY KNUBLEY, and Dr H. O. FORBES, appointed to work out the details of the Observations of the Migration of Birds at Lighthouses and Lightships, 1880-1887. Rep. Brit. Ass. 1899, p. 447.

**The Zoology of the Sandwich Islands.** Ninth Report of the Committee consisting of Professor NEWTON (*Chairman*), Dr W. T. BLANFORD, Professor S. J. HICKSON, Dr F. DU CANE GODMAN, Dr P. L. SCLATER, Mr E. A. SMITH, and Mr D. SHARP (*Secretary*). Rep. Brit. Ass. 1899, p. 436.

### III. SYSTEMATIC.

#### Sub-class SAURURÆ.

##### Order ARCHÆOPTERYGES.

See FORBES (163).

##### Order ODONTORNITHIFORMES.

See FORBES (163).

#### Sub-class RATITÆ.

*Palæognathæ* (*Ratitæ* and *Crypturæ*), Morphology and Phylogeny of; PYCRAFT, Tr. Zool. Soc. xv, pp. 149-290, pls. xlii-xlv.

##### Order STRUTHIONIFORMES.

See FORBES (163).

*Struthio australis*, on the pairing and incubation; SCHREINER, Ibis 1900, pp. 219 & 220.

##### Order CASUARIIFORMES.

See FORBES (163).

*Dromaius ater*, note on the specimen in the Florence Museum; GIGLIOLI, Victorian Natural. xvii, pp. 114 & 115: *D. novæ hollandiæ*, longevity of life; OUSTALET, Ornith. x, p. 62.

*Casuarus*, Monograph of the genus; ROTHSCHILD, Tr. Zool. Soc. London xv, pp. 109-148, pls. xxii-xli: a key to the species and subspecies, pp. 111 & 112: *C. casuarus*, head and neck figured; id. t. c. pp. 113-116, pl. xxii: *C. casuarus beccarii*, head and neck figured; id. t. c. pp. 116-118, pl. xxiii: *C. casuarus salvadorii*, head and neck figured; id. t. c. p. 120, pl. xxiv: *C. casuarus intensus*, head and neck figured; id. t. c. pp. 121 & 122, pl. xxvii: *C. casuarus violicollis*, head and neck figured; id. t. c. p. 122, pl. xxvi: *C. casuarus australis*, head and neck figured; id. t. c. pp. 123-129, pl. xxv: *C. bicarunculatus*,



head and neck figured; id. t. c. pp. 129-131, pl. xxviii: *C. unappendiculatus*, head and neck figured; id. t. c. pp. 132-134, pls. xxix & xxx: *C. unappendiculatus occipitalis*, head and neck figured; id. t. c. pp. 135 & 136, pl. xxxi: *C. unappendiculatus occipitalis aberr. laglaizei*, note on; id. t. c. p. 136: *C. unappendiculatus aurantiacus*, head and neck figured; id. t. c. p. 136, pl. xxxii: *C. unappendiculatus rufotinctus*, n. subsp., hab. unknown; id. t. c. p. 137: *C. philipi*, described and figured; id. t. c. pp. 138 & 139, pl. xxxiii: *C. papuanus*, head and neck figured; id. t. c. pp. 139-141, pl. xxxiv: *C. papuanus edwardsi*, head and neck figured; id. t. c. pp. 141-143, pl. xxxv: *C. lorix*, head and neck figured; id. t. c. pp. 142 & 143, pl. xxxviii: *C. picticollis*, head and neck figured; id. t. c. pp. 143 & 144, pl. xxxvi: *C. picticollis heeki*, head and neck figured; id. t. c. p. 144, pl. xxxvii: *C. bennetti*, head and neck figured; id. t. c. pp. 145-147, pl. xxxix: *C. bennetti maculatus*, n. subsp., hab. unknown; id. t. c. p. 148.

#### Order DINORNITHIFORMES.

See FORBES (163).

#### Order ÆPYORNITHIFORMES.

See FORBES (163).

#### Sub-class CARINATÆ.

*Neognathæ* (*Carinataæ*), Morphology and Phylogeny of; PYCRAFT, Tr. Zool. Soc. London xv, pp. 149-290.

#### Order TINAMIFORMES.

See FORBES (163).

*Crypturus soui* (Hermann) pro *C. pileatus* (Bodd.); RICHMOND, Auk xvii, p. 179.

*C. inornatus*, n. sp., Mexico; NELSON, Auk xvii, pp. 253 & 254.

#### Order GALLIFORMES.

*Megapodius pritchardi*, pterylosis of the adult, nestling, and embryo; PYCRAFT, Willey's Zoological Results Part iv, pp. 483-492, pl. xlix.

*Oraz alberti*, young described; ALLEN, Bull. Amer. Mus. xiii, p. 127.

*Gallinuloides wyomingensis*, n. sp. [Fossil], Green River Shales of Wyoming; LUCAS, Bull. Mus. Harvard xxxvi, pp. 79-84, pl. i.

*Cumana* nomen emend. pro *Pipile* Bp. voided by *Pipilo* Vieill.; COUES, Auk xvii, p. 65.

*Tetraonidæ*. The moult of the North American Quails, Partridges, and Grouse; DWIGHT, Auk xvii, pp. 143-166, pls. iv & v.

*Lagopus mutus*, formerly in Rum; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1900, p. 50.

*Canachites canadensis osgoodi*, n. subsp., Alaska; BISHOP, Auk xvii, pp. 114 & 115.

*Centrocercus urophasianus*, notes on; BOND, Auk xvii, pp. 325-327.

*Caccabis saxatilis*, in Hungary; CZATO, Ornith. Jahrb. xi, pp. 63-65.

*Francolinus harwoodi*, figured; GRANT, Ibis 1900, pl. vi: *F. tetraoninus*, figured; id. t. c. pl. v: *F. castaneicollis* from Abyssinia and Somaliland; id. t. c. p. 335.

*Pternistes swainsoni*, note on; ALEXANDER, Ibis 1900, pp. 445 & 446.

*Perdix cinerea* var. *montana*, figured; GURNEY, Zoologist 1900, pl. ii.

- P. montana* and other varieties of *P. perdix*; TEGETMEIER, Bull. B. O. C. xi, p. 30.
- Ptilopachys florentiae*, n. sp., British East Africa; GRANT, Bull. B. O. C. x, p. cvii.
- Gennaeus whiteheadi*, described and figured; id. P. Zool. Soc. London 1900, pp. 503 & 504, pl. xxxiv.
- Cerionis caboti*, eggs described and colours of the soft parts of ♂ ♀; LA TOUCHE, Ibis 1900, pp. 29 & 30.
- Euplocamus nycthemerus*, longevity of life; OUSTALET, Ornith. x, p. 62.
- Phasianus colchicus*, nesting in October; TEGETMEIER, Bull. B. O. C. xi, p. 5.
- P. reevesii*, tuberculosis in; DREW, Tr. N. Zealand Inst. xxii, pp. 54–56.
- Nemida rikwa*, n. sp., S. of Rikwa Lake, E. Africa; REICHENOW, Ornith. Monber. viii, p. 39.
- N. mitrata*, note on; ALEXANDER, Ibis 1900, pp. 447 & 448.
- Guttera edouardi*, note on; id. t. c. pp. 448 & 449.
- Meleagris gallopavo*, longevity of life; OUSTALET, Ornith. x, p. 62: nesting in the Huachuca Mts., Arizona; HOWARD, Condor ii, pp. 55–57, figg. 1, 2.
- M. gallopavo merriami*, n. subsp., Arizona; NELSON, Auk xvii, pp. 120–123.
- Dendrocygna macrourus dilutus*, n. subsp., Mexico; id. t. c. pp. 254 & 255.
- Callipepla squamata*, *C. squamata castanogastris*, *C. californica*, *C. californica vallicola*, *C. gambeli*, notes on the moult; DWIGHT, Auk xvii, pp. 47–50.
- Oreortyx pictus*, in captivity; SHUFELDT, Ornith. x, pp. 71–76, pl. i.
- Colinus virginianus*, *C. virginianus floridanus*, *C. virginianus texanus*, *C. ridgwayi*, notes on the moult; DWIGHT, Auk xvi, pp. 43–46.
- Ortyx virginianus*, note on; MÉREL, Ornith. x, pp. 191–195.
- Oreortyx pictus*, *O. pictus plumiferus*, *O. pictus confinis*, notes on the moult; DWIGHT, Auk xvii, pp. 46 & 47.
- Cyrtonyx montezumae*, note on the moult; id. t. c. pp. 50 & 51.
- C. montezumae mearnsi*, n. subsp., Texas, New Mexico, and Arizona; NELSON, Auk xvii, pp. 255 & 256.
- Odontophorus atrifrons*, n. sp., Valparaiso, U. S. Colombia; ALLEN, Bull. Amer. Mus. xiii, pp. 127 & 128.

## Order TURNICIFORMES.

- Turnix olivae*, n. sp., N. Queensland; ROBINSON, Bull. B. O. C. x, p. xliii.

## Order PTEROCLIDIFORMES.

- See FORBES & ROBINSON (165).
- Syrnaptus*, note on the systematic position; SHUFELDT, Amer. Natural. xxxiv, pp. 11–16, cum fig.
- Pterocles*, notes on the systematic position; SHUFELDT, Amer. Natural. xxxiv, pp. 11–16, cum fig.
- Pterocles exustus somalicus*, n. subsp., Somaliland; HARTERT, Nov. Zool. vii, p. 28: *P. e. orientalis*, n. subsp., India; id. t. c. p. 28.
- P. gutturalis saturator*, n. subsp., Athi Plain, Brit. E. Africa; HARTERT, Nov. Zool. vii, p. 29.
- P. bicinctus*, note on; ALEXANDER, Ibis 1900, pp. 449 & 450.

## Order COLUMBIFORMES.

- Columba*, see FORBES, H. O. & ROBINSON, H. C. (165).
- Treron vordermani*, n. sp., Kangean Island; FINSCH, Notes Leyden Mus. xxii, p. 162.

- Ptilopus coronulatus*, eggs described; LE SOUËF, Ibis 1900, p. 616.  
*Globicera farguhari*, n. sp., Erromanga, New Hebrides; SHARPE, Ibis 1900, p. 349.  
*Carpophaga griseicapilla*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 501.  
*Turacena menadensis sulaensis*, n. subsp., Sula Islands; FORBES & ROBINSON, Bull. Liverp. Mus. ii, p. 135: *T. iriditorques*, figured; iid. t. c. pls. ii & iii.  
*Macropygia minor* Swinh. is a distinct species; GRANT, P. Zool. Soc. London 1900, p. 502.  
*Reinwardtana*, review of the genus: *R. reinwardti albida*, n. subsp., Buru; HARTERT, Nov. Zool. vii, pp. 240 & 241.  
*Turtur turtur arenicola*, breeding in Tunis; ERLANGER, J. Ornith. 1900, p. 100.  
*Homopelia chuni*, n. sp., Chagos Is. (Diego Garcia); REICHENOW, Ornith. Monber. viii, p. 140.  
*Phlogoenas keayi*, n. sp., Negros; CLARKE, Ibis 1900, pp. 359 & 360, pl. viii.

## Order RALLIFORMES.

- Canirallus batesi*, n. sp., French Congo; SHARPE, Bull. B. O. C. x, p. lvi.  
*Crex pratensis*, note on the moult and colour changes; BONHOTE, Zoologist 1900, pp. 29-31.  
*Porzana jamaicensis*, life history; ALLEN, Auk xvii, pp. 1-8, pl. i: STONE, t. c. pp. 171 & 172.  
*Pennula sandwichensis* and *P. millsi*, figured; ROTHSCHILD, Avif. Layson, Part iii, pl. lxxvi.  
*Notornis mantelli*, note on its origin and extinction; HENRY, Tr. N. Zealand Inst. xxii, pp. 53 & 54.

## Order COLYMBIFORMES.

See FORBES (163).

- Gavia* Forster (nec Gm., *apud auct. amer.*) = *Urinator* Cuv.; REICHENOW, Ornith. Monber. viii, pp. 135 & 136.  
*G. arctica*, in Colorado; AIKEN, Auk xvii, p. 298.

## Order SPHENISCIFORMES.

See OUSTALET (363A).

- Notes on various species; RACOVITZA, Bull. Soc. Belge Geol. 1900, pp. 21-26, figg. 1-6.  
*Eudyptes chrysocome*, plumages of the young described; HALL, Ibis 1900, pp. 32 & 33.

## Order PROCELLARIIFORMES.

- Notes on various species; RACOVITZA, Bull. Soc. Belge Geol. 1900, pp. 17-19.  
*Oceanites oceanicus*, notes on the nesting habits; HALL, Ibis 1900, pp. 19-21.  
*Puffinus cuneatus* and allies, nesting habits; ANTHONY, Auk xvii, pp. 247-252, pl. viii.  
*P. bulleri*, off the Californian Coast; LOOMIS, P. Calif. Ac. ii, p. 319.  
*P. gravis*, in Scottish waters; NEWTON, Ann. Scott. Nat. Hist. 1900, pp. 142-147.  
*P. kuhli*, in the Färöen Islands; HAASE, Ornith. Monber. viii, p. 43.

- P. yellowanus*, near Bridlington, Yorks.; SHARPE, Bull. B. O. C. x, p. xlviii: at Scarborough; CLARKE, Zoologist 1900, p. 521.  
*P. newelli*, n. sp., Hawaiian Isl.; HENSHAW, Auk xvii, pp. 246 & 247.  
*Oestrelata lessoni*, nestling described; HALL, Ibis 1900, pp. 23 & 24.  
*O. fœx*, notes on; SALVADORI, Ibis 1900, pp. 302 & 303: *O. mollis*, full synonymy given and young described; id. t. c. pp. 300–302.  
*O. fœx*, note on; OUSTALET, Bull. Mus. Paris No. 4, pp. 167–170.  
*Oenofraga gigantea*, notes on; HALL, Ibis 1900, pp. 25–28, fig. 2.  
*Prion desolatus*, nesting habits; id. t. c. pp. 29 & 30.  
*Diomedea chionopectera* and *D. melanophrys*, notes on; id. t. c. pp. 12–18, fig. 1.  
*D. melanophrys*, near the Faroe Islands; HARVIE-BROWN, Zoologist 1900, p. 324.  
*D. chinensis*, in Hawaii; HENSHAW, Auk xvii, p. 202.  
*D. platei*, head figured; REICHENOW, J. Ornith. 1900, p. 245.

## Order ALCIFORMES.

- Mergulus alle*, on the Solway Firth; MACPHERSON, Ann. Scott. Nat. Hist. 1900, p. 123.  
*Micruria*, notes on the genus; ANTHONY, Auk xvii, pp. 168 & 169.

## Order LARIFORMES.

- Gavia* Gm. = *Larus* Linn. and *Gavia* Forster (nec Gm.) = *Urinator* Cuv.; REICHENOW, Ornith. Monber. viii, pp. 135 & 136.  
 Ueber die Fusshaltung fliegender Möven; ROTH, Ornith. Monber. viii p. 156.  
*Sterna*, nesting of species on the Farquhar Islands; FARQUHAR, Ibis 1900, pp. 63–67.  
*S. virgata*, nesting habits; HALL, Ibis 1900, pp. 11 & 12.  
*S. caspia*, on the coast of East Pomerania; BALLOWITZ, J. Ornith. 1900, pp. 165–175.  
*Anous stolidus pileatus* (Scop.), from Ruk Isl.; HARTERT, Nov. Zool. vii, pp. 9 & 10.  
*Rhynchops flavirostris*, eggs described; ALEXANDER, Ibis 1900, p. 442.  
*Larus minutus*, breeding in Prov. Riazan, Russia; NEWMHAM, Bull. B. O. C. x, p. 31.  
*L. franklinii*, account of the nesting habits; ROBERTS, Auk xvii, pp. 272–283, pls. ix–xi.  
*L. ridibundus*, note on; CLARK, Essex Natural. xi, pp. 184–190.  
*L. dominicanus*, note on; HALL, Ibis 1900, pp. 10 & 11.  
*L. argentatus*, note on; KNIGHT, Auk xvii, pp. 63 & 64, 169.  
*L. glaucescens*, in Hawaii; HENSHAW, Auk xvii, pp. 201 & 202.  
*Megalestris antarctica*, notes on; HALL, Victorian Natural. xvii, pp. 101–104: id. Ibis 1900, pp. 8–10.  
*Stercorarius pomatorhinus*, eggs figured; HILL, Ibis 1900, pl. xi.  
*S. parasiticus*, in Shetland; SAXBY, Zoologist 1900, p. 281.

## Order CHARADRIIFORMES.

- Chionarchus minor*, nesting habits; HALL, Ibis 1900, pp. 6–8.  
*Xiphidiopterus albiceps*, in Uhehe, E. Africa; REICHENOW, Ornith. Monber. viii, p. 4.  
*Vanellus cristatus*, distribution in France in 1885 and 1886; TERNIER, Ornith. x, pp. 77–96.  
*Chatusia gregaria*, in Hungary; MADARÁSZ, Ornith. Monber. viii, p. 170.

- Charadrius plumialis* × *C. fulvus*, from the Yenesei Valley; POPHAM, Bull. B. O. C. xi, p. 41.
- C. plumialis*, migration and distribution in France in 1885 and 1886; TERNIER, Ornith. x, pp. 97-118.
- C. dominicus* and *C. aquatarola*, notes on the plumage; DWIGHT, Auk xvii, pp. 383-385.
- C. pallidus*, notes on nesting; ALEXANDER, Ibis 1900, pp. 452-454.
- C. rufocinctus*, n. sp., Great Fish Bay, S.W. Africa; REICHENOW, Ornith. Monber. viii, p. 123.
- Himantopus knudseni*, figured; ROTHSCHILD, Avif. Laysan, Part III, pl. lxvii.
- Numenius arquata*, breeding in Surrey; BIDWELL, Bull. B. O. C. xi, p. 34; SAUNDERS, l. c.: abnormal growth on the bill; SHUFELDT, Ornith. x, pp. 477-479.
- Limosa lapponica*, breeding in Russian Lapland; WITHERBY, Bull. B. O. C. x, p. xlv: nesting in the Kola Peninsula; id. Ibis 1900, p. 489.
- Micropalama himantopus*, in Colombia; ALLEN, Auk xvii, p. 364.
- Totanus totanus eurhinus*, n. subsp., Lake Tsomoriri, Ladak, Central Asia; OBERHOLSER, P. U. S. Mus. xxii, pp. 207 & 208.
- T. flavipes*, in Colombia; ALLEN, Auk xvii, p. 364.
- Actitis macularia*, notes on the plumages; DWIGHT, Auk xvii, pp. 375-379.
- Machetes pugnax*, distribution in Ireland; PATTEN, Irish Natural. ix, pp. 187-209, 272 & 273, pl. 6.
- Bartramia longicauda*, in Colombia; ALLEN, Auk xvii, p. 364.
- Ereunetes pusillus*, in Colombia; id. t. c. p. 364.
- Tryngites subruficollis*, in Colombia; id. t. c. p. 364.
- Calidris arenaria*, notes on the plumages; DWIGHT, Auk xvii, p. 379-381.
- Heteropygia maculata*, in Co. Mayo, Ireland; SAUNDERS, Bull. B. O. C. xi, p. 34.
- H. bairdi*, in Rye Harbour, Sussex; F. HARTERT, Bull. B. O. C. xi, p. 27.
- Tringa maculata* and *T. minutilla*, in Colombia; ALLEN, Auk xvii, p. 364.
- T. alpina* and *T. alpina pacifica*, notes on the plumage; DWIGHT, Auk xvii, pp. 381-383.
- Scolopax major*, in Stirlingshire; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1900, p. 247.
- Crymophilus fulvicarius*, in Hawaii; HENSHAW, Auk xvii, pp. 203 & 204.
- Phalaropus hyperboreus*, note on the species on Elba Isl.; DAMIANI, Atti Soc. Ligustica xi, pp. 27-34: migration in Montana; CAMERON, Ibis 1900, pp. 67-70.
- Steganopus tricolor*, migration in Montana; id. t. c. pp. 67-70.
- Rhinoptilus albobasatus*, probably female of *R. chalcopertus*; ALEXANDER, Ibis 1900, pp. 455-457.
- Glareola pratincola*, near Montrose; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1900, p. 51.
- G. melanopectera*, in Italy; ARRIGONI, Ibis 1900, pp. 60-62.
- G. emini*, on the Zambesi; ALEXANDER, Ibis 1900, p. 458.
- Oedienemus oedienemus*, notes on; SELOUS, Zoologist 1900, pp. 173-185, 270-277, 458-476.
- Otis denhami*, from Port Elizabeth; TEGETMEIER, Bull. B. O. C. xi, p. 41.
- Lissotis lovati*, n. sp., Abyssinia; GRANT, Bull. B. O. C. x, p. xxxix.

## Order GRUIFORMES.

- Grus cinerea*, distribution and migrations in France in 1885 and 1886; TERNIER, Ornith. x, pp. 205-211.
- G. tilfordi* identical with *G. grus*; HEINROTH, J. Ornith. 1900, p. 247.
- G. japonensis*, longevity of life; OUSTALET, Ornith. x, p. 62.
- Rhinochetus jubatus*, its systematic position: nestling figured and pterylosis described; BURCHARDT, Acta Ac. German. lxxvii, No. 3, pp. 249-296,

pl. xi, figg. 1-6 in text: notes on the nestling; id. Verh. Ges. Basel xii, pp. 412-429 cum fig.

### Order ARDEIFORMES.

- Theristicus*, a review of the genus with full synonymy of and key to the species; SALVADORI, Ibis 1900, pp. 501-517: *T. colombianus* Finsch = *T. caudatus*, imm.: id. t. c. p. 504: *T. branickii* Berl. & Stolz., distinct from *T. melanopsis*, adult and young figured; id. t. c. p. 515, pls. ix & x.
- Ajaja rosea*, note on and bill figured; ALBERT, Revist. chilena iv, p. 7, pl. i.
- Ciconia alba*, distribution and migrations in France in 1885 and 1886; TERNIER, Ornith. x, pp. 213-227.
- Anastomus lamelligerus*, below Khartoum; C. ROTHSCHILD, Bull. B. O. C. x, p. c.
- Ephippiorhynchus senegalensis*, longevity; OUSTALET, Ornith. x, p. 62.
- Ardea cinerea*, see WYATT (756).
- Ardea sumatrana*, in Negros Is., Philippines; CLARKE, Ibis 1900, p. 357.
- A. egretta*, in Colorado; AIKEN, Auk xvii, p. 298.
- A. cærulea*, in Labrador; BANGS, Auk xvii, p. 386.
- Nycticorax griseus*, breeding in Silesia; KOLLIBAY, J. Ornith. 1900, pp. 152-155: *N. nycticorax*, notes on the species in California; COHEN, Condor ii, pp. 10-12.
- N. magnifica*, figured; GRANT, P. Zool. Soc. London 1900, pl. xxxiii.
- Butorides virescens*, in U. S. Colombia; ALLEN, Auk xvii, p. 564.
- B. albolimbatus*, n. sp., Chagos Isl. (Diego Garcia); REICHENOW, Ornith. Monber. viii, pp. 140 & 141.
- Ardeola idæ*, note on and figured; MARTORELLI, Atti Soc. Ital. xxxix, pp. 349-356, pl. vii.
- Zebrius pumilus*, figured; FORBES, Bull. Liverp. Mus. iii, pls. i & ii.
- Botaurus stellaris*, in Stirlingshire; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1900, p. 122: in Ayrshire; PATERSON, t. c. p. 122: in Nairn; BUCKLEY, t. c. p. 122.

### Order PHENICOPTERIFORMES.

- Phanicopterus roseus*, notes on the nesting; GOUBIE, Ornith. x, pp. 229-234.

### Order ANSERIFORMES.

- Cf. McCUE, Agric. Gaz. N. S. W. xi, pp. 952-962, figg. 1-4.
- Cygnus immutabilis*, notes on; HEINROTH, J. Ornith. 1900, p. 247: REICHENOW, J. Ornith. p. 248.
- Chen rossii*, colour of the soft parts; BLAAUW, Ibis 1900, pp. 399 & 400.
- C. nivulii*, in Ireland; USSHER, Irish Natural. ix, p. 109.
- Anser neglectus*, in Hungary; MADARÁSZ, Termes. Fuzetek xxiii, pp. 75-79.
- A. albifrons*, in Shetland; BUCKLEY, Ann. Scott. Nat. Hist. 1900, p. 50.
- A. erythropus*, breeding in North Norway; H. J. PEARSON, Bull. B. O. C. x, p. xli.
- A. cinereus*, notes on; DUTHIE, Ann. Scott. Nat. Hist. 1900, pp. 193-196.
- Branta canadensis minima* [*Bernicla canadensis munroei*, on plate], figured; ROTHSCHILD, Avif. Laysan, Part III, pl. lxxx.
- Chenaloper aegyptiacus*, in North America; KIRKWOOD, Auk xvii, pp. 64 & 65: longevity; OUSTALET, Ornith. x, p. 62.
- Ducks and Duck-breeding; BROWN, J. Board Agric. London vii, pp. 300-310.

- Anas boschas* + *Dafila acuta*; BEYER, Auk xvii, pp. 170 & 171.  
*A. wyvilliana*, male, female, and young, figured; ROTHSCHILD, Avif. Laysan Part III, pls. lxxviii & lxxix.  
*Dafila eatoni*, notes on; HALL, Ibis 1900, pp. 4-6.  
*Querquedula circea*, breeding in Kent; TICEHURST, Zoologist 1900, p. 279.  
*Q. discors*, in Friesland; SNOUCKAERT VAN SCHAUBERG, Ornith. Monber. viii, pp. 17 & 18.  
*Spatula clypeata*, breeding in Kent; TICEHURST, Zoologist 1900, p. 279.  
*Fuligula marila* and *F. fuligula*, notes on; BAKER, J. Bombay Soc. xiii, pp. 2-13.  
*F. cristata*, breeding in Shropshire; FORREST, Zoologist 1900, pp. 506-510, cum fig.  
*Clangula glaucion*, notes on; BAKER, J. Bombay Soc. xiii, pp. 13-20.  
*C. clangula americana*, notes on the breeding habits; BREWSTER, Auk xvii, pp. 207-216, pls. vi & vii.  
*Somateria spectabilis*, notes on the plumage; NORTON, Auk xvii, pp. 16-18.  
*Erimatura leucocephala*, figured; BAKER, J. Bombay Soc. xiii, pl. ix, pp. 20-24.  
*Mergus albellus*, notes on; id. t. c. pp. 200-206: in Shetland; BUCKLEY, Ann. Scott. Nat. Hist. 1900, p. 50.  
*Merganser squamatus*, described and figured; GRANT, Ibis 1900, p. 602, pl. xii.  
*M. serrator*, in Hawaii; HENSHAW, Auk xvii, p. 203: figured; BAKER, J. Bombay Soc. xiii, pl. x, pp. 217-222: *M. castor*, notes on; id. t. c. pp. 207-217.

## Order PELECANIFORMES.

- Phalacrocorax lucidus*, in Northern Rhodesia; SCLATER, P. Zool. Soc. London 1900, p. 3.  
*P. glaucus* = *P. chalconotus*; ROTHSCHILD, Bull. B. O. C. x, p. liii.  
*P. verrucosus*, nesting habits; HALL, Ibis, 1900, pp. 2-4.  
*Sula*, nesting of species on the Farquhar Islands; FARQUHAR, Ibis 1900, pp. 63-67.  
*S. bassana*, still breeds on Lundy Island; BLATHWAYT, Zoologist 1900, pp. 376 & 377.  
*S. abbotti*, in Christmas Island; R. B. SHARPE, Monogr. Christmas Isl. p. 44.  
*Fregata aquila*, plumage of adult male and female, and young described; id. t. c. p. 42: C. W. ANDREWS, t. c. pp. 42-44: notes on; FINSCH, Ornith. Monschr. Schutze xxv, pp. 446-452.  
*Phaethon rubricauda erubescens*, n. subsp., Kermadec, Norfolk, Lord Howe's Islands; ROTHSCHILD, Avif. Laysan, Part III, p. 296.  
*P. fulvus*, figured; SHARPE, Monogr. Christmas Isl. p. 45, pl. iii.

## Order ACCIPITRIFORMES.

- See SALVIN & GODMAN (457).  
 Systematische Ergebnisse osteologischer Untersuchungen einiger Tagraubvögel; SUSCHKIN, Zool. Anz. xxiii, No. 615, pp. 269-277.  
 Accipitriformes, classification of; id. t. c. pp. 269-277, 522-528.  
*Circus pygargus*, in Co. Wicklow in September; WILLIAMS, Irish Natural. ix, p. 21.  
*Urotriorchis macrourus*, in the Cameroons, REICHENOW, J. Ornith. 1900, p. 270.  
*Astur jardinei* is from British Guiana; SHARPE, Bull. B. O. C. x, p. lvi.  
*A. natalis*, figured; R. B. SHARPE, Monogr. Christmas Isl. p. 46, pl. v.

- Lophospiza trivirgata*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 489.
- Accipiter nisus*, nesting habits; MEIKLEJOHN, Zoologist 1900, p. 381: DAVENPORT, t. c. pp. 426-428.
- A. affinis*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 490.
- Buteo ferox*, notes on; OBERHOLSER, P. U. S. Mus. xxii, pp. 213-217: *B. zimmermannæ* and allies, distribution in Germany; SCHALOW, J. Ornith. 1900, p. 249.
- Urubitinga urubitinga*, in a cave at Caripè, Venezuela; ROTHSCCHILD, Bull. B. O. C. x, p. 411.
- Morphnus guianensis*, figured; SALVIN & GODMAN, Biol. Centr.-Amer. Aves iii, Part CLX, pl. 63.
- Thalassæetus macrurus*, n. sp., Yakutsk, E. Siberia; MENZBIER, Bull. B. O. C. xi, p. 4.
- Gypæetus barbatus*, in the Tirol; TSCHUSI, Ornith. Jahrb. xi, pp. 225-227.
- Aquila*, notes on the species: *A. murina*, n. sp., E. Himalayas; SUSCHKIN, Bull. B. O. C. xi, p. 8: *A. fulvescens*, in S.E. Europe; FÜHRER, Ornith. Jahrb. xi, p. 25; KLEINSCHMIDT, Ornith. Monber. viii, pp. 65 & 66: in North Albania, notes on; ROTHSCCHILD, Bull. B. O. C. x, pp. li & lii.
- Eutolmaetus weiskei*, n. sp., S.E. New Guinea; REICHENOW, Ornith. Monber. viii, pp. 185 & 186.
- Lophotriorchis lucani*, remarks on; SUSCHKIN, Bull. B. O. C. x, p. 31.
- Spizæetus nipalensis*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 490.
- Lophoæetus occipitalis*, in North Angola; FERREIRA, J. Lisb. (2) vi, No. xxi, p. 54.
- Haliaæetus albicilla*, in the Yukon region, Alaska; BISHOP, Biol. Surv. U. S. Agric. 19, pp. 73 & 74: *H. vocifer*, note on the habits; ALEXANDER, Ibis 1900, pp. 435 & 436.
- Milvus icinus*, an old record in Fifeshire; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1900, p. 49: *M. regalis*, in Kent; GREEN, Knowledge xxiii, No. 173, p. 61.
- Microhierax melanoleucus*, note on; LA TOUCHE, Ornith. x, pp. 183-186.
- Lithofalco æsalon pallidus*, n. subsp., Kirghis Steppes; SUSCHKIN, Bull. B. O. C. xi, p. 6.
- Falco regulus* must stand for the Merlin, *F. merillus* Gerini is untenable; OBERHOLSER, Auk xvii, p. 173.
- Hierofalco altaicus*, remarks on; SUSCHKIN, Bull. B. O. C. xi, p. 3: from Turkestan; id. t. c. p. 3: *H. lorenzi*, n. sp., C. Siberia; MENZBIER, Bull. B. O. C. xi, pp. 3 & 4.
- Falco islandus*, nestling plumage described; CHAPMAN, Auk xvii, p. 387.
- Tinnunculus*, morphology of; SUSCHKIN, Mem. Soc. Moscou xvi, pp. 1-163, pls. 1-6.
- Cerchneis tinnunculus*, evidence of its insect-eating propensities; BERGE, Ornith. Monber. viii, pp. 37 & 38: *C. saturata*, male described; GRANT, Ibis 1900, p. 601.
- Tinnunculus naumanni*, in South Bohemia; JANDA, Ornith. Jahrb. xi, pp. 189-195: TALSKY, t. c. xi, pp. 235 & 236.

## Order STRIGIFORMES.

- Osteology of the *Strigidae* and *Bubonidae*; SHUFELDT, P. Amer. Phil. Soc. xxxix, No. 164, pp. 665-722, pls. x-xvii.
- Morphology of the cranium in the Owls; SHUFELDT, J. Morphol. xvii, pp. 119-176, pls. xvii-xx.
- Asio otus*, in Barta; MAGILLIVRAY, Ann. Scott. Nat. Hist. 1900, p. 191: in Islay; SKIRVING, t. c. p. 184: GILMOUR, t. c. p. 49.



- Bubo ascalaphus*, eggs from the Dahshur Pyramid, Egypt; W. ROTHSCCHILD, Bull. B. O. C. xi, p. 10: *B. mackinderi*, figured; SHARPE, P. Zool. Soc. London 1900, pl. xliii.
- Pulsatrix fasciiventris*, n. sp., Ecuador; SALVADORI & FESTA, Boll. Mus. Torino xv, No. 368, pp. 32 & 33.
- Pisorhina* Kaup. vice *Scops* Brünn. (nec Briss.); REICHENOW, Ornith. Monber. viii, p. 68: *P. magica* and its allies; HARTERT, Nov. Zool. vii, pp. 227 & 228.
- Scops grui*, in Shetland; CLARKE, Ann. Scott. Nat. Hist. 1900, p. 184: *S. latouchi*, n. sp., Fohkien, China; RICKETT, Bull. B. O. C. x, p. lvi.
- Bubo letti* is a *Scops*; SHARPE, Bull. B. O. C. x, p. lv.
- Megascops flammeolus* and *M. flammeolus idahoensis*, life history and distribution; OBERHOLSER, Ornith. x, pp. 23-38.
- Athene chiaradiae*, n. sp., Udine, Italy; GIGLIOLI, Avicula iv, pp. 57-60.
- Ninox natalis*, figured; R. B. SHARPE, Monogr. Christmas Isl. p. 47, pl. iv.
- Syrnium nebulosum*, breeding in Colorado; AIKEN, Auk xvii, p. 298.
- Gisella jheringi* is from Rio Grande do Sul; JHERING, Ibis 1900, p. 217.
- Carina noctua*, in Flintshire; FORREST, Zoologist 1900, p. 482: note on; MEADE-WALDO, t. c. p. 556: in North Wales; DOBIE, t. c. p. 556.
- Speotyto cunicularia cavicola*, nomen emend. pro *S. bahamensis* Maynard nec Cory; BANGS, Auk xvii, p. 287.
- Glaucidium sylvaticum*, figured; BÜTTIKOFER, Notes Leyden Mus. xxi, pl. 13: *G. borneense* Sharpe = *G. sylvaticum*; id. t. c. p. 155: *G. whitelyi*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 488.
- Aluco* Flem. The first tenable generic name for the Barn Owls; COUES, Auk xvii, pp. 65 & 66.
- Strix flammea* and its allies; HARTERT, Nov. Zool. vii, pp. 531-534: *S. flammea kirchhoffi* Brehm. is the name for the English race; id. t. c. p. 533: *S. flammea schmidtii*, n. subsp., Madeira; id. t. c. p. 534: *S. meridionalis* Koenig = *S. paradoxa* Brehm.; id. t. c. p. 533: *S. pratincola*, at Toronto; FLEMING, Auk xvii, p. 177: *S. cayetii*, n. sp., Buru; HARTERT, Nov. Zool. vii, p. 228.

## Order PSITTACIFORMES.

- Eos kuehni* = *E. rubra* juv.; W. ROTHSCCHILD in Sharpe's Handl. B. ii, p. 2: *E. bornea* and *E. cyanonotus*, notes on; HARTERT, Nov. Zool. vii, pp. 228 & 229.
- Trichoglossus novae-hollandiae septentrionalis*, n. subsp., North Queensland; ROBINSON, Bull. Liverp. Mus. ii, p. 115: eggs described; LE SOUËF, Victorian Natural. xvii, p. 146.
- Charmosynopsis bella*, n. sp., Wharton Range, New Guinea; DE VIS, Ann. Queensland Mus. No. 5, pp. 12 & 13, pl. viii.
- Oreopsittacus frontalis*, n. sp., Aroa River, S.E. New Guinea; REICHENOW, Ornith. Monber. viii, p. 186.
- Cacatua galerita triton* and allies, note on; ROBINSON & LAVEROCK, Ibis 1900, pp. 642-644.
- Nanitera bruyni*, from Ambernoh River, Dutch New Guinea; ROTHSCCHILD, Bull. B. O. C. x, p. ci.
- Pyrrhura griseipectus*, n. sp., Hab. ?; SALVADORI, Ibis 1900, pp. 672 & 673: *P. hypoxantha*, described and figured; id. t. c. pl. xiv: *P. chiripepe* (Vieill.) is distinct from *P. vittata* (Shaw); id. t. c. pp. 668-671: a key to the species; id. t. c. pp. 673 & 674.
- Brotoperys virescens*, breeding habits; W. A. SCHULZ, Ornith. Monber. viii, pp. 56 & 57.
- Amazona oratrix tresmariae*, n. subsp., Tres Marias Isl.; NELSON, Auk xvii, p. 256.

*Psephenus meyeri erythraea* and *P. meyeri transvaalensis* O. Neumann, are not distinct from *P. meyeri*; ALEXANDER, Ibis 1900, pp. 429 & 430.

*Prioniturus mada*, n. sp., Buru; HARTERT, Nov. Zool. vii, p. 230.

*Puleornis salvadorii* Oust. is distinct from *P. derbyanus* Fraser; GRANT, Ibis 1900, p. 600.

*Agapornis lilianae*, note on; ALEXANDER, Ibis 1900, pp. 431 & 432.

*Platycercus macgillivrayi*, n. sp., North Queensland; NORTH, Victorian Natural. xvii, pp. 91-93, 113 & 114: *P. icterotis*, eggs described; LE SOUËF, Ibis 1900, p. 460.

### Order CORACIIFORMES.

#### Sub-order PODARGI.

*Batrachostomus*, sp. inc. Negros, Philippines; CLARKE, Ibis 1900, pp. 355 & 356. [*B. menagei* ♀.]

#### Sub-order CORACIÆ.

*Atelornis squamigera* is the type of the genus *Atelornis*; L. STEJNEGER in Sharpe's Handl. B. ii, p. 45.

*Uratelornis chimæra*, note on; OUSTALET, Bull. Mus. Paris 1899, no. 6, pp. 280-282.

*Eurytornis calonyx* is a summer visitor to Kuatun [not *E. orientalis* as stated Ibis 1892, p. 478]; LA TOUCHE, Ibis 1900, p. 44.

#### Sub-order HALCYONES.

*Ceryle lugubris continentalis*, n. subsp., Himalayas; HARTERT, Nov. Zool. vii, p. 534.

*Alcedo euryzone*, at Pankalan Ampat, Sarawak; SHELFORD, J. Straits Asiat. Soc. No. 33, p. 18: *A. grandis*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 487.

*Ceyx tridactyla*, in Hainan; id. t. c. p. 487.

*Syma weiskei*, n. sp., Astrolabe Mts. S.E. New Guinea; REICHENOW, Ornith. Monber. viii, p. 186.

*Dacelo gigas minor*, n. subsp., North Queensland; ROBINSON, Bull. Liverp. Mus. ii, p. 116 = *D. gigas*; ROBINSON & LAVEROCK, Ibis 1900, p. 638: *D. gaudichaudi*, nest and eggs described; LE SOUËF, Ibis 1900, pp. 616 & 617.

*Halcyon farguhari*, figured; SHARPE, Ibis 1900, pl. vii: *H. semicærulea hyacinthina*, n. subsp., E. Africa; REICHENOW, J. Ornith. 1900, p. 249: *H. australasie dammeriana*, n. subsp., Dammer Isl.; HARTERT, Nov. Zool. vii, p. 19: *H. sancta*, figured; SETH-SMITH, Avicult. Mag. vi, pl. i.

#### Sub-order BUCEROTES.

*Buceros (Pholidophalus) kethullei*, n. sp., Congo Free State; DUBOIS, Ornith. Monber. viii, p. 69: *B. sharpii*, in North Angola; FERREIRA, J. Lisb. (2) vi, No. xxi, p. 54.

*Lophoceros erythrorhynchus*, note on; ALEXANDER, Ibis 1900, pp. 101 & 102.

## Sub-order UPUPÆ.

*Upupa epops pallida*, n. subsp., Tunis; ERLANGER, J. Ornith. 1900, pp. 15-17.

*Rhinopomastus schalowi*, n. sp., Equatorial Africa; NEUMANN, t. c. pp. 221 & 222: *R. cabanisi*, figured; DUBOIS, Synopsis Avium, pl. iii, fig. 1.

## Sub-order MEROPES.

See DUBOIS (138).

*Melittophagus sharpei*, n. sp. [*M. cyanostictus*, auct. nec Cab.]; HARTERT, Nov. Zool. vii, p. 35: is true *M. cyanostictus* Cab., *M. pusillus ocularis*, n. subsp., N.E. Africa; REICHENOW, Ornith. Monber. viii, p. 87.

*Merops batesiana*, n. sp., French Congo, *M. northcotti*, n. sp., Gold Coast; SHARPE, Bull. B. O. C. x, pp. xlviii & xlix: *M. natalensis*, note on; ALEXANDER, Ibis 1900, pp. 97-99: *M. boehmi*, in the Zambesi region; id. t. c. p. 97.

*Nyctiornis athertoni*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 486.

## Sub-order MOMOTI.

*Momotus lessoni goldmani*, n. subsp., Mexico; NELSON, Auk xvii, pp. 256 & 257.

## Sub-order CAPRIMULGI.

See DUBOIS (138).

On the palate of certain forms of *Caprimulgidae*; PYCRAFT, Bull. B. O. C. xi, pp. 12 & 13.

*Nyctibius jamaicensis mexicanus*, n. subsp., Mexico; NELSON, Auk xvii, p. 260.

*Macropsalis forcipata* Burm. = *M. creagra* (Bp.); E. HARTERT in Sharpe's Handl. B. ii, p. 81.

*Antrostomus oaxaca*, n. sp., Mexico; NELSON, Auk xvii, pp. 260 & 261: *A. chiapensis*, n. sp., Mexico; id. t. c. p. 261.

*Caprimulgus fülleborni*, n. sp., New Heligoland, W. of Lake Nyasa; REICHENOW, Ornith. Monber. viii, p. 98: *C. eximius*, near Khartoum; H. F. WITHERBY, Bull. B. O. C. x, p. cv: *C. griseatus*, female described; CLARKE, Ibis 1900, pp. 353 & 354: *C. stellatus*, figured; GRANT, Ibis 1900, pl. iv: *C. frænatus* and *C. rufigena* belong to the group which have a red collar; SHARPE, Ibis 1900, p. 499.

## Sub-order CYPSELI.

See DUBOIS (138).

*Chaturus thomensis*, n. sp., St Thomé Isl. W. Africa; HARTERT, Bull. B. O. C. x, p. liv: *C. caudacuta*, breeding near Nerochinski; H. NOBLE, Bull. B. O. C. x, p. xlvii: *C. pelagica*, its nesting; SCOTT, Bull. B. O. C. x, p. liv: *C. stictolema*, from the Zambesi region; ALEXANDER, Ibis 1900, p. 93.

*Cypselus* v. *Apus* for the typical Swifts; SHARPE, Handl. B. ii, pp. v, 95: *C. alfredi*, n. sp., Mbara, Nyasaland; SHELLEY, B. Africa, ii, Part II, p. 345: *C. melba*, anatomy of; BURT, Jena. Zeitschr. xxxiii, pp. 361-610, pls. xvii-xxii: *C. apus*, nesting habits; STEELE-ELLIOTT, Zoologist 1900, pp. 479-481: *C. brunneitorques griseifrons*, n. subsp., Mexico; NELSON, Auk xvii, p. 262.

## Sub-order TROCHILI.

See DUBOIS (138).

*Trochilidae*; HARTERT, Das Tierreich, Lief. 9, pp. x, 254.

The Rufous Humming-birds of Cape Disappointment; KOBBE, Auk xvii, pp. 8-15.

*Doryfera* Gould vice *Hemistephania* Reichenb.; HARTERT, J. Ornith. 1900, p. 358.

*Phaethornis berlepschi* Hartert = *P. symmatophorus* Gould; id. t. c. p. 359.

*Eutoxeres baroni* Hartert = *E. heterurus* Gould; SALVADORI & FESTA, Boll. Mus. Torino xv, No. 368, p. 2: the species is distinct; HARTERT, J. Ornith. 1900, pp. 359 & 360.

*Agrytria fluviatilis laeta*, n. subsp., Nauta, Upper Amazonia; id. t. c. p. 360.

*Chlorostilbon salvini*, from Panama; id. t. c. p. 361.

*Thalurania ridgwayi*, n. sp., S. Mexico; NELSON, Auk xvii, pp. 262 & 263: *T. venusta* is distinct from *T. columbica*; HARTERT, J. Ornith. 1900, p. 362.

*Heliodoxa jamesoni* × *Eugenia imperatrix*; E. HARTERT, Bull. B. O. C. x, p. xxxix.

*Helianthea hamiltoni*, n. sp., E Ecuador; GOODFELLOW, Bull. B. O. C. x, p. xlviii.

*Helianthea* sp.; ALLEN, Bull. Amer. Mus. xiii, p. 139: probably females of *Leucuria phalerata*; id. t. c. p. 184.

*Lafresnayeia cinereorufa* Boucard = *L. lafresnayeia* Bois.; HARTERT, J. Ornith. 1900, p. 364: *L. gayi* should stand as *L. saül*; id. t. c. p. 364.

*Calypte costae* × *Stellula calliope*; HARTERT, Bull. B. O. C. x, p. xxxix.

## Sub-order COLII.

*Colius affinis*, note on; SHARPE, P. Zool. Soc. London 1900, p. 600:

*C. macrourus pulcher*, n. subsp., Teita and Taweta, E. Africa; NEUMANN, J. Ornith. 1900, p. 190.

## Order TROGONES.

*Trogon virginialis*, Cab. et Hein. is distinct from *T. collaris*, Vieill.; SALVADORI & FESTA, Boll. Mus. Torino xv, No. 364, p. 17.

*Trogon* sp. from Gualaes (W. Ecuador) is probably distinct from *T. melanurus*, iid. t. c. p. 18.

*Harpactes hainanus*, n. sp., Hainan; GRANT, Bull. B. O. C. x, p. xxxvii; id. P. Zool. Soc. London 1900, p. 485.

*Hapaloderma rufiventre*, figured; DUBOIS, Synopsis Avium, pl. ii, fig. 3.

## Order COCCYGES.

## Sub-order MUSOPHAGI.

*Turacus chalcophilus*, figured; HARTERT, Nov. Zool. vii, p. 278, pl. i.

## Sub-order CUCULI.

*Cuculi*. Catalogue of the collection in the Leyden Museum; O. FINSCH, Notes Leyden Mus. xxii, pp. 75-125.

*Cuculus canorus*, parasitic on *Turdus musicus*; READ, Zoologist 1900, p. 520: breeding in the London District; MARTIN, t. c. p. 481: note on; WILSON, t. c. p. 481: note on the habits; MEIKLEJOHN, t. c. pp. 262-264: notes on; WOODRUFFE-PEACOCK, Naturalist 1900, 99-106.

- Cacomantis schistaceigularis*, n. sp., Espiritu Santo, New Hebrides; SHARPE, Ibis 1900, pp. 338 & 339: *C. weisket*, n. sp., Aroa River, S.E. New Guinea; REICHENOW, Ornith. Monber. viii, p. 186.
- Chrysococcyx rufomerus*, n. sp., Dammer Isl.; HARTERT, Nov. Zool. vii, p. 21.
- Chalococcyx innominatus*, n. sp., Kisser Isl., Timor; FINSCH, Notes Leyden Mus. xxii, p. 94: *C. plagosus*, parasitic on *Acanthiza uropygialis* and *Petræca goodenovii*; HALL, Victorian Natural. xvii, p. 128: parasitic on *Pardalotus assimilis*; id. t. c. pp. 40 & 41: *C. maculatus*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 484.
- Coccyzus americanus*, in Colombia; ALLEN, Auk xvii, p. 364: on the shores of Menai Straits; DICKINSON, Ibis 1900, p. 219.
- Eudynamis*. Review of the species; HARTERT, Nov. Zool. vii, pp. 230-232: *E. cyanocephala everetti*, n. subsp., Sumba Isl.; id. t. c. p. 231: *E. orientalis salvadorii*, n. subsp., New Britain; id. t. c. p. 232.
- Centropus sinensis*, embryo and nestlings described and figured; SHELFORD, Ibis 1900, pp. 654-667, pl. xiii, figg. in text 1-5: *C. cupreicauda*, in Uhehe, E. Africa; REICHENOW, Ornith. Monber. viii, p. 4.

## Order SCANSORES.

## Sub-order INDICATOIRES.

- Indicator barianus* Heuglin is distinct from *I. major*; ALEXANDER, Ibis 1900, p. 426: *I. minor teitensis*, n. subsp., Teita, E. Africa; NEUMANN, J. Ornith. 1900, p. 195: *I. lovati*, n. sp., Abyssinia; GRANT, Bull. B. O. C. x, p. xxxix.

## Sub-order CAPITONES.

- Lybius* Hermann pro *Melanobucco* Shelley; RICHMOND, Auk xvii, p. 179.
- Smilorhis soverbyi*, in Northern Rhodesia; SCLATER, P. Zool. Soc. London 1900, p. 3.
- Barbatula centralis*, n. sp., Ndussuma, E. Africa; REICHENOW, Ornith. Monber. viii, p. 40: *B. leucomystax*, in Uhehe; id. t. c. p. 4.
- Cyanops mystacophanos*, characters of female described; BUTTIKOFER, Notes Leyden Mus. xxi, p. 160.
- Semnornis*, nomen emend. pro *Pan* Richm. nec Oken; RICHMOND, Auk xvii, p. 179.

## Sub-order RHAMPHASTIDES.

- Rhamphastos carinatus*, from Colombia; ALLEN, Bull. Amer. Mus. xiii, p. 133.

## Order PICIFORMES.

## Sub-order PICI.

- Osteology of the Woodpeckers; SHUFELDT, P. Amer. Phil. Soc. xxxix, No. 164, pp. 578-622, pl. ix.
- Colaptes auratus*, monograph of; BURNS, Wilson Bulletin, No. 31 (2) vii, pp. 1-82: *C. cafer collaris* and *C. cafer saturation*, notes on; NELSON, Auk xvii, pp. 123 & 124.
- Chloronerpes rubripileus*, n. sp., Ecuador; SALVADORI & FESTA, Boll. Mus. Torino xv, No. 368, p. 14.
- Campothera hausburgi*, n. sp., Mt. Kenya; SHARPE, Bull. B. O. C. x, p. xxxvi.

- Gecinulus viridanus*, colours of the soft parts of ♂ and ♀; LA TOUCHE, Ibis 1900, pp. 43 & 44.
- Melanerpes dubius veracrucis*, n. subsp., Mexico; NELSON, Auk xvii, p. 259: *M. frontalis*, n. sp., Mexico; id. t. c. pp. 257 & 258: *Melanerpes cruentatus*, and *M. hargitti*, figured (heads): DUBOIS, Synopsis Avium, pl. ii.
- Dendrocopus major* and its allies; HARTERT, Nov. Zool. vii, pp. 527-531: *D. major anglicus*, n. subsp.; id. t. c. p. 528.
- Dryobates villosus intermedius*, n. subsp., Mexico; NELSON, Auk xvii, pp. 259 & 260.
- Picoides arcticus tenuirostris*, n. subsp., Oregon and California; BANGS, Auk xvii, pp. 131 & 132: *P. americanus bacatus*, n. subsp., Eastern North America; id. t. c. pp. 136-138: *P. americanus labradorius*, n. subsp., Labrador; id. t. c. p. 138.
- Dendromus malherbei nyansae*, n. subsp., Muansa, E. Africa; NEUMANN, J. Ornith. 1900, p. 204: *D. malherbei fulleborni*, n. subsp., Lake Nyassa; id. t. c. pp. 204 & 205: *D. taeniolaemus* (1) and *D. neumanni* (2) figured; id. t. c. Taf. 1.
- Dendropicus guineensis massaicus*, n. subsp., Lake Nguruman, E. Africa; NEUMANN, t. c. p. 206: *D. guineensis centralis*, n. subsp., Muansa, E. Africa; id. t. c. pp. 206 & 207: *D. guineensis sharpei*, from Uganda; id. t. c. p. 207: *D. simoni*, n. sp., Abyssinia; GRANT, Bull. B. O. C. x, p. xxxviii.
- Ixygypicus obsoletus ingens*, n. subsp., Nairobi, Brit. E. Africa; HARTERT, Nov. Zool. vii, p. 33.
- Mesopicos goertæ* and its allies, Notes on *M. goertæ abessinicus*, n. subsp., N.E. Africa: *M. goertæ centralis*, Equat. Africa; REICHENOW, Ornith. Monber. viii, pp. 58 & 59: *M. rhodogaster* Fisch. & Reichen. = *M. spodocephalus* (Rüpp.); NEUMANN, J. Ornith. 1900, p. 201: *M. griseocephalus*, on Kilimandjaro; id. t. c. p. 201.
- Lepocastes sinensis*, colours of the soft parts of ♂ and ♀; LA TOUCHE, Ibis 1900, p. 43.
- Campephilus principalis*, in Louisiana; BERGER, Auk xvii, pp. 97-99.
- Lync ruficollis* Wagl. pro *I. pectoralis* Vig.; RICHMOND, Auk xvii, p. 179.

## Order PASSERIFORMES.

## Family PTEROPTOCHIDÆ.

- Scytalopus analis*, figured; DUBOIS, Synopsis Avium, pl. iii, fig. 2.
- Zeledonia*, an Oscinine form, not related to *Scytalopus*; PYCRAFT, Bull. B. O. C. xi, p. 12.

## Family FORMICARIIDÆ.

- Thamnophilus torquatus*, ♂ ♀, figured; DUBOIS, Synopsis Avium, pl. v, figg. 1 & 2.
- Dysithamnus flemmingi*, n. sp., N. Ecuador; HARTERT, Bull. B. O. C. xi, pp. 38 & 39.
- Myrmotherula guayabambæ*, n. sp., Peru; SHARPE, Bull. B. O. C. xi, p. 2: *M. sanctæ-martæ*, n. sp., Valparaiso, U.S. Colombia: ALLEN, Bull. Amer. Mus. xiii, pp. 160 & 161: *M. brevicauda*, ♂ ♀, figured; DUBOIS, Synopsis Avium, pl. vi, figg. 2 & 3.
- Formicivora tobagensis*, n. sp., Tobago; DALMAS, Mem. Soc. zool. France xiii, p. 141.
- Hypocnemis naevioides*, figured; DUBOIS, Synopsis Avium, pl. iii, fig. 3.
- Manikup* Desmarest pro *Pithys* Vieill.; RICHMOND, Auk xvii, p. 179.
- Grallaria bangsi*, n. sp., El Libano, U.S. Colombia; ALLEN, Bull. Amer.

Mus. xiii, pp. 159 & 160: *G. paramba*, n. sp., N. Ecuador; ROTHCHILD, Bull. B. O. C. xi, pp. 36 & 37: *G. gigantea*, figured; DUBOIS, Synopsis Avium, pl. vi, fig. 1.  
*Grallaricula cumanensis*, n. sp., Venezuela; HARTERT, Bull. B. O. C. xi, pp. 37 & 38.

### Family DENDROCOLAPTIDÆ.

*Geositta brevirostris*, n. sp., Patagonia; SCOTT, Bull. B. O. C. x, p. lxiii: *G. rufipennis* and *G. isabellina*, figured; DUBOIS, Synopsis Avium, pl. vii.  
*Upucerthia darwini*, n. sp., Mendoza: *U. saturation*, n. sp., Chile: *U. fitzgeraldi*, n. sp., Argentina; id. t. c. p. lxiii.  
*Cindodes oustaleti*, n. sp., Chili: *C. molitor*, n. sp., Chile: *C. oreobates*, n. sp., Colombia: *C. sparsimstriatus*, n. sp., Peru [= *C. taczanowskii*, Berl.]; id. t. c. p. lxii.  
*Henicornis wallisi*, n. sp., Patagonia; id. t. c. p. lxiii.  
*Sittasomus sylvioides jaliscensis*, n. subsp., Mexico; NELSON, Auk xvii, pp. 264 & 265.  
*Dendroornis flavigaster megarhynchus*, n. subsp., S.W. Mexico; id. t. c. p. 265: *D. striatigularis*, n. sp., Alta Mira, Mexico; RICHMOND, P. U. S. Mus. xxii, pp. 317 & 318: *D. guttata*, figured: DUBOIS, Synopsis Avium, pl. vi, fig. 2.  
*Picolaptes albolineatus*, figured; DUBOIS, Synopsis Avium, pl. vi, fig. 1.  
*Dendrocolaptes sancti-thomae*, figured; DUBOIS, Synopsis Avium, pl. v, fig. 3.

### Family TYRANNIDÆ.

See DUBOIS (138).

*Agrionis poliosoma*, n. sp., Patagonia; SCOTT, Bull. B. O. C. x, p. lv: *A. leucurus*, n. sp., Patagonia; id. t. c. p. lxiv.  
*Ochthoeca jesupi*, n. sp., San Lorenzo, U.S. Colombia; ALLEN, Bull. Amer. Mus. xiii, pp. 151 & 152: *O. olivacea*, n. sp., Valparaiso, U.S. Colombia; id. t. c. p. 152.  
*Muscisaxicola garretti*, n. sp., Patagonia; SCOTT, Bull. B. O. C. x, p. lv [= *M. capistrata* Burm.; SCHALOW, Ornith. Monber. 1900, p. 97]: *M. hatcheri*, n. sp., Patagonia; id. t. c. p. lv.  
*Myiopagis placens jaliscensis*, n. subsp., Mexico; NELSON, Auk xvii, p. 264.  
*Phyllomyias venezuelensis*, n. sp., Venezuela; HARTERT, Bull. B. O. C. xi, p. 39.  
*Myiozetetes texensis* (Giraud) = *M. superciliosus* (Bp.); NELSON, Auk xvii, p. 124: *M. similis superciliosus* is the name for the Central American form; id. t. c. p. 124.  
*Myiobius assimilis*, n. sp., Valparaiso, U.S. Colombia; ALLEN, Bull. Amer. Mus. xiii, pp. 144 & 145.  
*M. litæ*, n. sp., N.W. Ecuador; HARTERT, Bull. B. O. C. xi, p. 40.  
*Sayornis saya yukonensis*, n. subsp., Alaska; BISHOP, Auk xvii, pp. 115 & 116: *S. nigricans* and its subspecies, notes on the distribution; NELSON, Auk xvii, pp. 124 & 125.  
*Empidonax timidus*, n. sp., Mexico; NELSON, t. c. p. 263: *E. bairdi perplexus*, n. subsp., Mexico; id. t. c. pp. 263 & 264.  
*Contopus richardsonii saturatus*, n. subsp., Alaska; BISHOP, Auk xvii, pp. 116-118.

### Family PIPRIDÆ.

*Pipra opalizans*, note on; SCHULZ, J. Ornith. 1900, pp. 242 & 243.  
*Chiroziphia pareola atlantica*, n. subsp., Tobago; DALMAS, Mem. Soc. zool. France xiii, p. 139.

## Family COTINGIDÆ.

- Pachyrhamphus salvini*, nomen emend. pro *P. similis*, Salvin nec Cherrie: DUBOIS, Synopsis Avium, Fasc. iii, p. 212.  
*Lipaugus holerythrus*, figured; DUBOIS, Synopsis Avium, pl. viii, fig. 1.  
*Attila brazilensis parambez*, n. subsp., N. Ecuador; HARTERT, Bull. B. O. C. xi, p. 39.  
*A. parvirostris*, n. sp., Minca, Santa Marta; ALLEN, Bull. Amer. Mus. xiii, p. 153: *A. rufpectus*, n. sp., Las Nubes, U.S. Colombia; id. t. c. pp. 153 & 154; *A. citreopygius*, figured; DUBOIS, Synopsis Avium, pl. viii, fig. 2.

## Family PITTIDÆ.

- Pitta vigorsii*, from Dammer Isl.; HARTERT, Nov. Zool. vii, p. 18.

## Family ATRICHORNITHIDÆ.

- Atrichia clamosa*, nest and eggs described; LE SOUËF, Ibis 1900, pp. 462 & 463.

## Family HIRUNDINIDÆ.

- See DUBOIS (138).  
*Delichon* Moore vice *Chelidon* Boie [preoccupied]; OBERHOLSER, P. U. S. Mus. xxii, pp. 227 & 228.  
*Chelidon urbica*, its life history in Russia; WAGNER, Mem. Ac. St. Petersb. (8) x, pp. 1-125, pls. i-vii.  
*Ptyonoprogne* Reichenb. is the proper generic name for the Crag Martins, *Biblia*, being preoccupied in Lepidoptera; OBERHOLSER, P. U. S. Mus. xxii, p. 227.  
*Hirundo rustica*, geographical distribution in Hungary during the year 1898; GAAL DE GYULA, Aquila vii, pp. 8-379, taf. 1-32: influenced by time; HEGYFÖKY, t. c. pp. 380-391, taf. 33-38: note on; BERNARD, Ornith. x, p. 50: *H. neoxena*, notes on; HALL, Victorian Natural. xvii, pp. 48-52: *H. cucullata* and *H. rustica*, migration on the Congo; PETIT, Ornith. x, pp. 51 & 52.  
*Psolidoprocne percivali*, in Mozambique; SHARPE, Ibis 1900, p. 114.

## Family MUSCICAPIDÆ.

- See DUBOIS (138).  
*Micropsa assimilis* and *M. pallida*, nests and eggs described; LE SOUËF, Ibis 1900, pp. 458 & 459: *M. addita*, n. sp., Mt. Mada, Buru; HARTERT, Nov. Zool. vii, p. 234: *M. viridiflava*, n. sp., S.E. New Guinea; W. ROTHSCHILD & E. HARTERT, Bull. B. O. C. xi, p. 26.  
*Bradyornis griseus* and allies, note on; SHARPE, Ibis 1900, pp. 112 & 113: *B. kaviroensis*, n. sp., Kwa Kissero, E. Africa; NEUMANN, J. Ornith. 1900, pp. 257 & 258.  
*Dioptrornis trotha*, n. sp., Rungwe, E. Africa; REICHENOW, Ornith. Monber. viii, p. 5.  
*Muscicapa grisola sibirica*, n. subsp., E. Siberia; NEUMANN, J. Ornith. 1900, pp. 259 & 260: *M. fülleborni*, n. sp., Rupira, N. of Lake Nyasa; REICHENOW, Ornith. Monber. viii, p. 122: *M. toruensis*, n. subsp., Toru, Equat. Africa; HARTERT, Nov. Zool. vii, p. 37.  
*Siphia everetti* (14) and *S. beccariana* (15), figured; BÜTTIKOFER, Notes Leyden Mus. xxi, pls. 14 & 15: *S. hainana*, n. sp., Hainan; GRANT, Bull. B. O. C. x, p. xxxvi: *S. hainana*, ♂ and ♀ described; GRANT, P. Zool. Soc. London 1900, pp. 480 & 481: *S. everetti*, figured, and



- plumages described; BÜTTIKOFER, Notes Leyden Mus. xxi, pp. 192-194, pl. 14: *S. beccariana*, figured, id. t. c. pl. 15.
- Cyornis brevirostris*, n. sp., Southern Shan States; BINGHAM, Ann. Nat. Hist. (7) v, p. 359.
- Nitidula hodgsoni*, on the Larut Hills; BUTLER, J. Straits Asiat. Soc. No. 32, p. 18.
- Petræca campbelli*, nest and eggs described; LE SOUËF, Ibis 1900, pp. 459 & 460.
- P. ambrynnensis*, n. sp., Ambryn Isl., New Hebrides; SHARPE, Ibis 1900, p. 341.
- Muscicapa tricolor* ♀ Temm. = *Erythromyias dumetoria* (Wall.); FINSCH, Notes Leyden Mus. xxii, p. 197.
- Erythromyias*, sp. n. (?), Mt. Penrissen, Sarawak; SHELFORD, J. Straits Asiat. Soc. No. 33, p. 14: *E. buruensis*, figured; HARTERT, Nov. Zool. vii, p. 234, pl. iv, fig. 3.
- Poliomyias luteola*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 480.
- Dammeria henrici* ♂ ♀ fully described; HARTERT, Nov. Zool. vii, pp. 14 & 15.
- Muscicapa tricolor* ♂ Temm. = *Muscicapula hyperythra* (Blyth); FINSCH, Notes Leyden Mus. xxii, p. 199.
- Gerygone placida*, n. sp., German New Guinea; MADARASZ, Ornith. Monber. ii, p. 3: *G. kuhni*, n. sp., Dammer Isl.; HARTERT, Nov. Zool. vii, p. 15.
- Eugerygone*, n. g., type *E. rubra* (Sharpe); FINSCH, Notes Leyden Mus. xxii, p. 200.
- Chaniempis gayi*, nest and eggs, figured; ROTHSCHILD, Avif. Laysan, pt. iii, pl. lxxxi, fig. 1.
- Metabolus rugensis*. Notes on plumages. Nests and eggs described; HARTERT, Nov. Zool. vii, pp. 4 & 5.
- Pacilodryas cyanus salvadorii*, n. subsp., S.E. New Guinea; W. ROTHSCHILD & E. HARTERT, Bull. B. O. C. xi, p. 26: *P. salvadorii*, n. sp., German New Guinea; MADARASZ, Ornith. Monber. viii, p. 1.
- Pholia*, n. gen., type *P. hirundinea*, n. sp., Rungwe, N. of Lake Nyasa; REICHENOW, Ornith. Monber. viii, p. 99.
- Hylota marginalis*, n. sp., Lumbuti, E. Africa; id. t. c. p. 5.
- Xanthopygia narcissina* and *X. fuliginosa*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 480.
- Alcippe abyssinica*, figured; SHELLEY, B. Africa, ii, pt. ii, pl. ii, fig. 1: *A. kilimensis* Shelley = *Lioptilus abyssinicus* (Rupp.); GRANT, Ibis 1900, pp. 173 & 174. [Cf. SHARPE, P. Z. S. 1884, p. 231.]
- Lioptilus galinieri* (Guer.) is a *Parisoma*; GRANT, Ibis 1900, p. 153.
- Polioptila*. Review of the genus; HELLMAYR, Nov. Zool. vii, pp. 536-538: *P. nigriceps major*, Peru: *P. nigriceps anteocularis*, Colombia, nn. subsp.; id. t. c. p. 538.
- Parisoma catoleucum*, n. sp., Chamba, Nyasa Land; REICHENOW, Ornith. Monber. viii, p. 5: *P. lugens*, from Abyssinia distinct from *P. lugens* Sharpe, nec Rüppell which = *P. jacksoni*, n. sp.; SHARPE, Bull. B. O. C. x, p. xxviii: cf. GRANT, Ibis 1900, p. 153: *Sylvia blanfordi* is a *Parisoma*; id. t. c. p. 154: notes on; GRANT, Nov. Zool. vii, p. 253.
- Chloropeta icterina*, from Mt. Kenya; SHARPE, P. Zool. Soc. London 1900, pp. 608 & 609.
- Batis molitor*, note on; ALEXANDER, Ibis 1900, pp. 89 & 90.
- Pachyprora fratrum*, n. sp., Zululand; SHELLEY, Ibis 1900, pp. 522 & 523 note.
- Platystira peltata*, from Santa Lucia Bay; WOODWARD, Ibis 1900, p. 522.
- Chenorhamphus grayi*, from the Ambernoh River, Dutch New Guinea; ROTHSCHILD, Bull. B. O. C. x, p. ci.

- Erythrocercus francisci*, probably adult of *E. livingstonei*; ALEXANDER, Ibis 1900, p. 90.
- Rhipidura devini* nomen emend. pro *R. albicauda* De Vis nec North; DUBOIS, Syn. Av. Man. d'Orn. Fasc. iv, p. 276: *R. erromanga*, n. sp., New Hebrides; SHARPE, Ibis 1900, pp. 340 & 341.
- Myiagra oceanica*, nests and eggs described; HARTERT, Nov. Zool. vii, pp. 5 & 6.
- Cryptolopha fulvifacies*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 481: *C. cebuensis*, nomen emend. pro *C. flavigularis*, Bourns and Worc. nec Godw.-Aust.: DUBOIS, Synopsis Avium, Fasc. iv, p. 287.
- Ardea batanta* Sharpe = *A. telescopthalma* (Garn.); FINSCH, Notes Leyden Mus. xxii, p. 56.
- Piezorhynchus reichenowi*, n. sp., German New Guinea; MADARASZ, Ornith. Monber. viii, p. 2.
- Heteranax mundus*, from Dammer Isl.; HARTERT, Nov. Zool. vii, p. 14.

## Family CAMPOPHAGIDÆ.

See DUBOIS (138).

- Graucalus purus* Sharpe = *G. caesi* (Licht.); GRANT, Ibis 1900, pp. 171 & 172: *G. cornix*, n. sp., Aroa River, S.E. New Guinea; REICHENOW, Ornith. Monber. viii, p. 187: *G. papuensis*, nest and eggs described; LE SOUËF, Ibis 1900, p. 615.
- Pericrocotus cantonensis*, *P. griseigularis*, and *P. cinereus*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 479.
- Lalage sharpei*, n. sp., Samoa; ROTHSCILD, Bull. B. O. C. x, p. xl.

## Family PYCNONOTIDÆ.

See DUBOIS (138).

- Cerasophila*, n. g., type *C. thompsoni*, n. sp., Southern Shan States; BINGHAM, Ann. Nat. Hist. (7) v, pp. 358 & 359.
- Brachypodius baweanus*, n. sp., Bawean Isl., Java; FINSCH, Notes Leyden Mus. xxii, pp. 209-211.
- Criniger sordidus*, n. sp., Lower Siam; RICHMOND, P. U. S. Mus. xxii, p. 320.
- Chlorocichla occidentalis*, eggs described; ALEXANDER, Ibis 1900, p. 73.
- Phyllostrephus terrestris* Swains. (March 1837) pro *P. capensis* Swains. (July 1837); RICHMOND, Auk xvii, p. 179.
- Xenocichla flavicollis shelleyi*, n. subsp., Muansa, E. Africa; NEUMANN, J. Ornith. 1900, p. 292: *X. kakamega*, n. sp., Nandi, Equat. Africa; SHARPE, Bull. B. O. C. xi, p. 29.

## Family TIMELIIDÆ.

See DUBOIS (138).

- Eremiornis*, n. g., type *E. carteri*, n. sp., N.W. Australia; NORTH, Victorian Natural. xvii, pp. 78 & 79, p. 93.
- Hemicurus sinensis*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 474: *H. schistaceus*, on the Larut Hills; BUTLER, J. Straits Asiatic Soc. No. 32, p. 19.
- Grallina picata*, note on the nest building; LE SOUËF, Knowledge xxxiii, pp. 93 & 94 cum fig.
- Drymadus brevicauda* De Vis, an *Amalocichla*; W. ROTHSCILD & E. HARTERT, Bull. B. O. C. xi, pp. 26 & 27.

- Trochalopteryx ripponi*, n. sp., S. Shan States; OATES, Bull. B. O. C. xi, pp. 10 & 11.
- Pinarornis plumosus*, notes on; ALEXANDER, Ibis 1900, p. 80.
- Pomatorhinus stridulus*, note on; GRANT, Ibis 1900, p. 590: *P. temporalis*, figured; NORTH, Agric. Gaz. N. S. W. xi, pl. xv, fig. 1.
- Garrulax semitorquata*, n. sp., Hainan; GRANT, B. O. C. x, p. xlix; id. P. Zool. Soc. London 1900, p. 475.
- Crateropus hindei*, n. sp., Athi River, Brit. E. Africa; SHARPE, Bull. B. O. C. xi, p. 29.
- Sczorhynchus*. Review of the species; HARTERT, Nov. Zool. vii, pp. 548 & 549; *S. ruficeps bakeri*, n. subsp., N. Cachar; *S. gularis transfluvialis*, n. subsp., Cachar; id. t. c. p. 548.
- Androphilus disturbans*, n. sp., Buru; HARTERT, Nov. Zool. vii, p. 238.
- Malacocincla büttikoferi*, n. sp., Borneo; FINSCH, Notes Leyden Mus. xxii, pp. 218 & 219.
- Turdinus jacksoni*, n. sp., Nandi, Equat. Africa; SHARPE, Bull. B. O. C. xi, p. 29.
- Drymocataphus cinnamomeus*, n. sp., S. Shan States; RIPPON, Bull. B. O. C. xi, p. 12.
- Crateroscelis pectoralis* and *C. rufobrunnea*, nn. spp., S.E. New Guinea; W. ROTHSCHILD & E. HARTERT, Bull. B. O. C. xi, pp. 25 & 26.
- Turdinulus granti*, n. sp., Lower Siam; RICHMOND, P. U. S. Mus. xxii, pp. 320 & 321.
- Stachyridopsis sulphurea*, n. sp., S. Shan States; RIPPON, Bull. B. O. C. xi, p. 11: *S. ruficeps*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 476.
- Schæniparus intermedius*, n. sp., S. Shan States; RIPPON, Bull. B. O. C. xi, p. 11: *S. variegatus* Styan = *S. genestieri* Oust.; GRANT, Ibis 1900, p. 592.
- Alcippe fratercula*, n. sp., S. Shan States; RIPPON, Bull. B. O. C. xi, p. 11: *A. kilimensis* Shelley = *A. abyssinica*; SHELLEY, B. Africa ii, Part II, p. 210, pl. ii, fig. 1.
- Yuhina ampelina*, n. sp., S. Shan States; RIPPON, Bull. B. O. C. xi, p. 12.
- Siva wingatei*, n. sp., Yun-nan; GRANT, Bull. B. O. C. x, p. xxxviii, Ibis 1900, p. 593.

### Family MIMIDÆ.

- Orpheus montanus*, date of discovery and type locality; COUES, Auk xvii, pp. 68 & 69.
- Mimus gilvus tobagensis*, n. subsp., Tobago; DALMAS, Mem. Soc. Zool. France xiii, p. 134.
- Harporhynchus curvirostris maculatus*, n. subsp., Mexico; NELSON, Auk xvii, pp. 269 & 270.

### Family TROGLODYTIDÆ.

- Thryothorus felix grandis*, n. subsp., Mexico; NELSON, Auk xvii, p. 269.
- Anorthura meligera*, n. sp., Alaska; OBERHOLSER, Auk xvii, pp. 25 & 26.
- Odontorhynchus branickii minor*, n. subsp., N. Ecuador; HARTERT, Bull. B. O. C. xi, p. 400.
- Pseudozenicus*, n. g., type *P. superciliaris* (Bp.); FINSCH, Notes Leyden Mus. xxii, pp. 213 & 214.

## Family CINCLIDÆ.

*Cinclus cinclus*, in Saxony; NITSCHKE-THARANDT, SB. Ges. Isis 1900, pp. 32-35: *C. melanogaster*, in Corsica; SAPSWORTH, Bull. B. O. C. xi, p. 12.

## Family TURDIDÆ.

Monograph of the Turdidæ or family of Thrushes. By HENRY SEEBOHM (edited after the author's death by R. BOWDLER SHARPE), London, 1900, 4to, pts. viii, ix, x.

*Geocichla varia*, nest and eggs; NOBLE, Bull. B. O. C. x, p. xlvii: *G. sibirica*, and *G. varia*, occurrence in Europe; MARTORELLI, Ornith. x, pp. 241-291: *G. papuensis*, from Aroa River, British New Guinea; ROTHSCCHILD, Bull. B. O. C. x, p. xlv: *G. heinii*, nest and eggs described; LE SOUFFR, Ibis 1900, p. 464: *G. duman*, figured; HARTERT, Nov. Zool. vii, p. 239, pl. iv, fig. 3: *G. gurneyi kilimensis*, n. subsp., Kifinika, Kilimanjaro; NEUMANN, J. Ornith. 1900, p. 310: *G. litsitsirupa stierlingi*, n. subsp., Iringa Isl., C.E. Africa; REICHENOW, Ornith. Monber. viii, p. 5.

*Hylocichla fuscescens*, in Colombia; ALLEN, Auk xvii, p. 367: and *H. fuscescens salicicola*, range in North America; HOWE, Auk xvii, pp. 18-25: *H. fuscescens fuliginosa*, n. subsp., Newfoundland; id. t. c. pp. 270 & 271.

*Turdus migratorius*, note on the nesting; HERRICK, Auk xvii, pp. 100-103, pls. ii, iii: *T. saturatus*, *T. pelios* and allies, notes on; HARTERT, Nov. Zool. vii, p. 53: *T. obscurus*, in Italy; MARTORELLI, Avicula iv, pp. 33-35.

*Merula melanaria*, n. sp., S.E. New Guinea; MADARÁSZ, Ornith. Monber. viii, p. 23: *M. torquata*, notes on; FOX, Zoologist 1900, pp. 1-10: *M. dubius* in Friesland; SNOUCKAERT VAN SCHAUBERG, Ornith. Monber. viii, pp. 18 & 19: *M. atrigularis*, *M. obscura*, *M. ruficollis*, *M. naumanni*, *M. fuscata*, their occurrence in Europe; MARTORELLI, Ornith. x, pp. 241-291.

*Myiophoneus borneensis*, plumages described; BÜTTIKOFER, Notes Leyden Mus. xxi, pp. 258-261.

*Zeledonia*, an Oscinine form; PYCRAFT, Bull. B. O. C. xi, p. 12.

*Daulias philomela*, in the Zambesi region; ALEXANDER, Ibis 1900, p. 86.

*Pinarochroa ernesti*, n. sp., Mt. Kenya; SHARPE, Bull. B. O. C. x, p. xxxiv: note on; id. P. Zool. Soc. London 1900, pp. 606 & 607.

*Erythropygia ukambensis*, n. sp., Ukambani, Brit. E. Africa; SHARPE, Bull. B. O. C. xi, p. 29.

*Coscypha caffra mawensis*, n. subsp., Mountains of Mau, E. Africa; NEUMANN, J. Ornith. 1900, p. 309: *C. caffra iolema*, n. subsp., German East Africa; REICHENOW, Ornith. Monber. viii, p. 5: *C. heuglini*, note on; ALEXANDER, Ibis 1900, pp. 85 & 86: *C. omoensis*, n. sp., Omo River, Equat. Africa; SHARPE, Bull. B. O. C. xi, p. 28.

*Thamnodau argentata*, n. sp., Ukinga, N. of Nyasa Land; REICHENOW, Ornith. Monber. viii, p. 100: *T. semirufa*, note on the plumage; GRANT, Ibis 1900, p. 170: *T. arnotti*, note on; ALEXANDER, Ibis 1900, pp. 87 & 88.

*Alethe fulleborni*, n. sp., Tandalla, N. of Nyasa Land; REICHENOW, Ornith. Monber. viii, p. 100: *A. poliothorax*, n. sp., Cameroons; REICHENOW, Ornith. Monber. viii, p. 6.

*Monticola angolensis*, in Mashonaland; MARSHALL, Ibis 1900, p. 228.

*Sialia nalis*, note on the nesting; HERRICK, Auk xvii, pp. 100-103, pls. ii & iii.

- Ruticilla titys*, at Brighton in December; BRYANT, Zoologist 1900, p. 37: in Aberdeen; SIM, Ann. Scott. Nat. Hist. 1900, p. 121: in the Solway Area; MACPHERSON, t. c. pp. 47 & 48: *R. cairei*, in Bosnia, distinct from *R. titys*; BERLEPSCH, J. Ornith. 1900, p. 127; MATSCHIE, t. c. p. 127.
- Pratincola rubetra spatzi*, n. subsp., Tunis; ERLANGER, J. Ornith. 1900, p. 101: *P. rubicola*, breeding in Upper Silesia; KOLLIBAY, Ornith. Monber. viii, p. 81.
- Tarsiger olivaceus*, n. sp., Ukinga, N. of Nyasa Land; REICHENOW, Ornith. Monber. viii, p. 100.
- Saxicola oreophila* nomen emend. pro *S. montana* Gould nec Koch; OBERHOLSER, P. U. S. Mus. xxii, pp. 221 & 222: *S. semenowi*, n. sp., Eastern Persia; BIANCHI & ZARUDNY, Annuaire Mus. St. Petersb. v, pp. 187-189: *S. pileata albinotata*, n. subsp., Ssero, North-west Masailand; NEUMANN, J. Ornith. 1900, p. 313.

## Family SYLVIIDÆ.

- Sylvia nisoria*, in Lincolnshire; CATON HAIGH, Knowledge xxii, No. 170, p. 278.
- S. atricapilla*, in Perthshire in December; DAVIDSON, Ann. Scott. Nat. Hist. 1900, p. 121: *S. subalpina leucopogon* (Heckel), in Tunis; ERLANGER, J. Ornith. 1900, p. 102: *S. blanfordi* is a *Parisoma*; GRANT, Ibis 1900, p. 154: id. Nov. Zool. vii, p. 253: *S. provincialis*, notes on; HUDSON, Humane Review, April 1900, pp. 28-38.
- Phylloscopus rufus*, in Barra; MACGILLIVRAY, Ann. Scott. Nat. Hist. 1900, p. 121: near Edinburgh; CLARKE, t. c. p. 183: in the Clyde district; PATERSON, t. c. p. 246: *P. rufus sylvestris* Meisner, notes on this and other species of *Phylloscopus*; PARROT, J. Ornith. 1900, pp. 455-458: *P. subaffinis*, n. sp., S.W. Kwei-chu, China; GRANT, Bull. B. O. C. x, p. xxxvii: described; id. Ibis 1900, pp. 585 & 586.
- Oreopneuste davidi*, n. sp., Western China; BEREZOWSKI & BIANCHI, Annuaire Mus. St. Petersb. v, p. 211: = *P. bianchii* nomen emend. pro *Oreopneuste davidi* Berezow. & Bianchi nec Swinh.]
- Hypolais polyglotta*, in Sussex; BUTTERFIELD, Ibis 1900, pp. 569 & 570, Zoologist 1900, p. 518.
- Acrocephalus inexpectatus*, n. sp., Western China; BEREZOWSKI & BIANCHI, Annuaire Mus. St. Petersb. v, pp. 210 & 211: *A. ayrix*, nests and eggs described; HARTERT, Nov. Zool. vii, pp. 3 & 4.
- Tatara vaughani*, n. sp., Pitcairn Isl.; SHARPE, Bull. B. O. C. xi, p. 2.
- Locustella naevia*, nesting in Morayshire; MACKESSACH, Ann. Scott. Nat. Hist. 1900, p. 48.
- Luscinola gracilirostris*, notes on; ALEXANDER, Ibis 1900, p. 81.
- Cettia bivitata*, n. sp., Timor; FINSCH, Notes Leyden Mus. xxii, p. 209.
- Bradypterus castaneus*, n. sp., Cameroons; REICHENOW, Ornith. Monber. viii, p. 6: *B. salvadorii*, n. sp., Gurui and Kilimanjaro; NEUMANN, J. Ornith. 1900, p. 304.
- Apalis equatorialis*, n. sp., Angata anyuk, E. Africa; id. t. c. p. 307: *A. porphyrolema* (1) and *A. griseiceps*, figured; id. t. c. Taf. II.
- Euprinodes hildegardæ*, note on; SHARPE, Ibis 1900, pp. 497 & 498.
- Sylviella*, review of the genus: *S. whytei*, notes on: *S. flecki*, n. sp., S. of Lake Ngami: *S. karnapi*, n. sp., E. Cameroons district: *S. fischeri*, n. subsp., Malindi, E. Africa: *S. pallida*, notes on; REICHENOW, Ornith. Monber. viii, pp. 21 & 22: *S. brachyura* Lafr. is distinct from *S. micrura* (Rüpp.); GRANT, Ibis 1900, pp. 154 & 155: *S. minima*, n. sp., Manda Island, E. Africa; id. t. c. p. 156: key to the species; id. t. c. pp. 156 & 157: *S. jacksoni* Sharpe = *S. whytii*

- Shelley; id. t. c. p. 155: *S. baraka* Sharpe = *S. virens* (Cass.); id. t. c. p. 156: *S. major*, n. sp., Usandawe, E. Africa; NEUMANN, J. Ornith. 1900, p. 305: *S. pallida* and *S. minima*, figured; ALEXANDER, Ibis 1900, pl. i, figg. 1 & 2.
- Prinia mystacea*, nest and eggs described; MARSHALL, Ibis 1900, p. 231.
- Burnesia brunneiceps*, n. sp., Rupira, N. of Lake Nyasa; REICHENOW, Ornith. Monber. viii, p. 122: *B. gracilis*, its flight; ROTHSCHILD, Bull. B. O. C. x, p. c.
- Cisticola aridula*, n. sp., White Nile, 60 miles below Khartoum; WITHERBY, Bull. B. O. C. xi, p. 13: *C. ambigua*, n. sp., Mau, Brit. E. Africa; SHARPE, t. c. p. 28: *C. lovati*, n. sp., Abyssinia; GRANT, Ibis 1900, p. 161: *C. prinioidea*, n. sp., Mountains of Mau, E. Africa; NEUMANN, J. Ornith. 1900, p. 304: *C. terrestris*, nest and eggs described; MARSHALL, Ibis 1900, pp. 231 & 232.
- Acanthiza tenuirostris*, n. sp., Leigh Creek, Victoria; ZIETZ, Tr. R. Soc. S. Austral. xxiv, p. 112.
- Sericornis frontalis*, nest and eggs described; LE SOUËF, Victorian Natural. xvii, pp. 145 & 146.
- Smicronis flavesens*, nest and eggs described; id. Ibis 1900, pp. 461 & 462.
- Malurus cyaneus* and allies, notes on; HALL, Victorian Natural. xvi, pp. 135-141, xvii, pp. 41 & 42: *M. gouldii* and *M. cyaneus*, notes on the plumage; id. P. Soc. Victoria (2) xii, p. 59.

## Family ARTAMIDÆ.

- Artamus superciliosus*, *A. personatus*, and *A. sordidus*, notes on the nesting; HALL, J. Agric. W. Austral. ii, pp. 388-397 cum figg.

## Family VIREONIDÆ.

- Vireo perquinitor*, n. sp., S. Mexico; NELSON, Auk xvii, pp. 267 & 268: *V. amauronotus strenuus*, n. subsp., Mexico; id. t. c. p. 268.
- Hylophilus brunneus*, n. sp., Las Nubes, U. S. Colombia; ALLEN, Bull. Amer. Mus. xiii, p. 171: *H. pallidifrons*, n. sp., Tobago; DALMAS, Mem. Soc. zool. France xiii, pp. 135 & 136.
- Vireolanius miketta*, n. sp., N. Ecuador; HARTERT, Bull. B. O. C. xi, p. 38.

## Family PRIONOPIDÆ.

- Rhectes phaeocephalus*, n. sp., Baillala River, and *R. nigrescens schistaceus*, Aroa River, S.E. New Guinea; REICHENOW, Ornith. Monber. viii, p. 187.
- Collyriocincla pallidirostris*, nest and eggs described; LE SOUËF, Victorian Natural. xvii, p. 145.
- Pinarolestes dissimilis*, n. sp., German New Guinea; MADARASZ, Ornith. Monber. viii, p. 2.

## Family LANIIDÆ.

- Cracticus rufescens* De Vis, probably distinct from *C. quoyi*; ROTHSCHILD, Bull. B. O. C. x, p. xl.
- Artamia comorensis*, figured; SHELLEY, B. Africa ii, Part I, pl. ii, fig. 1.
- Telephonus reichenowi*, n. sp., East Africa; NEUMANN, J. Ornith. 1900, p. 120: *T. percivali*, n. sp., S. Arabia; GRANT, Bull. B. O. C. x, p. l.

- Bocagia potteri*, n. sp., Upper Nile; OUSTALET, Bull. Mus. Paris 1900, pp. 225 & 226.
- Dryoscopus nandensis*, n. sp., Nandi, Equat. Africa; SHARPE, Bull. B. O. C. xi, p. 28: *D. fülleborni*, n. sp., Usufua, N. of Nyasa Lake; REICHENOW, Ornith. Monber. viii, p. 39.
- Laniarius mossambicus* Fischer & Reichenow = *L. aethiopicus picatus* Hartl; NEUMANN, J. Ornith. 1900, p. 271.
- Pachycephala melanura dammeriana*, n. subsp., Dammer Isl.; HARTERT, Nov. Zool. p. 17: *P. arctitorquis*, from Dammer Isl.; id. t. c. p. 17: *P. gutturalis*, notes on; HALL, Victorian Natural. xvii, pp. 52-54: *P. intacta*, n. sp., Malicolo and Espiritu Santo, New Hebrides; SHARPE, Ibis 1900, p. 343: nest and eggs described; FARQUHAR, t. c. p. 611: *P. examinata* and *P. griseonota*, notes on; HARTERT, Nov. Zool. vii, p. 236: *P. peninsulae*, nest and eggs described; LE SOUFF, Victorian Natural. xvii, p. 146.
- Lanius excubitor homeyeri*, note on; JOHANSEN, Ornith. Jahrb. xi, pp. 28-34: *L. eleagni*, note on; SUSCHKIN, Bull. B. O. C. xi, p. 5: *L. raddei*, in East Africa; NEUMANN, J. Ornith. 1900, p. 120: *L. reichenowi*, remarks on; id. t. c. p. 266.

### Family SITTIDÆ.

- Sitta europæa britannica*, n. subsp., England; notes on the European species of *Sitta*; HARTERT, Nov. Zool. vii, p. 626: *S. whiteheadi*, note on; SAPIORTH, Bull. B. O. C. xi, p. 12: *S. yunnanensis*, n. sp., Yun-nan; GRANT, op. cit. x, p. xxxvii: type fully described; id. Ibis 1900, p. 582: *S. magna*, note on; id. t. c. p. 583.

### Family PARIDÆ.

- Notes on the Tits of Germany (Die deutschen Meisen); BRAUN, Ornith. Monber. viii, pp. 130-135.
- Parus transcaspicus*, n. sp., Transcaspian; ZARUDNY, Mem. Ac. St. Petersb. (8) x, p. 203: *P. fülleborni*, n. sp., Undis, E. Africa; REICHENOW, Ornith. Monber. viii, p. 5: *P. nigriloris*, n. sp., Ishigaki, S. Liu Kiu Is.; HELLMAYR, t. c. viii, p. 139: *P. communis italicus*, n. subsp., Tuscany; TSCHUSI & HELLMAYR, Ornith. Jahrb. x, p. 204: *P. montanus kleinschmidti*, n. subsp., England; HELLMAYR, t. c. p. 212: *P. major*, nesting habits; STEELE-ELLIOTT, Zoologist 1900, pp. 423 & 424: *P. afer*, in Northern Rhodesia; SCLATER, P. Zool. Soc. London 1900, p. 3: *P. salicarius kleinschmidti*, in the south of England; HARTERT, Bull. B. O. C. xi, p. 27: *P. nigrinereus* Jackson = *P. funereus*; SHELLEY, B. Africa ii, Part II, p. 227: *P. albiventris* and *P. xanthostomus*, figured; id. t. c. pl. x, figg. 1 & 2: *P. masukuensis*, n. subsp., Masuku range and Nyika plateau, Nyasaland; id. t. c. p. 238: *P. barakæ* Jackson = *P. thruppi*; id. t. c. p. 244: *P. cristatus* and *P. salicarius*, and allied forms, notes on; KLEINSCHMIDT, Ornith. Monber. viii, p. 168: *P. rhenanus*, n. sp., Rhine Provinces, id. t. c. p. 168: *P. rufescens barlowi*, n. subsp. Coast range of California, S. of San Francisco; GRINNELL, Condor ii, p. 127.
- Picole salicaria neglecta*, n. subsp., Pleskaw, N.W. Russia; ZARUDNY & HARMS, Ornith. Monber. viii, p. 19: *P. s. bianchii*, nom. emend.; iid. t. c. p. 67.
- Acredula*, notes on the species in Germany; Kleinschmidt t. c. pp. 167 & 168: *A. dorsalis* and *A. senex*, n. spp., Caucasus; MADARASZ, Termes. Fuzetek xxiii, pp. 198-203, Tab. vii, figg. 1 & 2.
- Ægithalus*, remarks on; HELLMAYR, J. Ornith. 1900, p. 372: *Æ. musculus*, figured; SHELLEY, B. Africa ii, Part II, pl. 11, fig. 2.

- Egithaliscus pulchellus*, n. sp., S. Shan States; RIPPON, Bull. B. O. C. xi, p. 11.  
*Panurus biarmicus*, notes on; GURNEY, Zoologist 1900, pp. 358-374, pl. v, map: RIDSDALE, t. c. p. 422: NOBLE, t. c. p. 423: MACPHERSON, t. c. p. 478: *P. biarmicus*, figured; BONHOTE, Avicult. Mag. vi, pp. 213-216, pl. iii.

### Family ZOSTEROPIDÆ.

- Zosterops macgillivrayi*, n. sp., Malicolo and Api Is., New Hebrides; SHARPE, Ibis 1900, pp. 345 & 346: *Z. vatensis* Tristram = *Z. griseonota* Gray; id. t. c. p. 346: *Z. semperi owstoni*, n. subsp., Ruk Isl., Carolines, nest and eggs described; HARTERT, Nov. Zool. vii, pp. 2 & 3: *Z. natalis*, figured; SHARPE, Monogr. Christmas Is. p. 49, pl. vi: *Z. neglecta* Seebohm = *Z. palpbrosa* (Temm.); GRANT, P. Zool. Soc. London 1900, p. 469: *Z. buruensis*, notes on; HARTERT, Nov. Zool. vii, p. 237: *Z. obstinatus*, n. sp., Batchian; id. t. c. p. 238: *Z. modesta*, figured; SHELLEY, B. Africa ii, Part i, pl. vi, fig.: *Z. semiflava*, figured; id. t. c. pl. vi, fig. 2: *Z. pallida* (1), *Z. andersoni* (2), *Z. virens* (3), figured; id. t. c. pl. vii: *Z. ficedulina*, figured; id. t. c. Part ii, pl. viii, fig. 1: *Z. comorensis*, n. sp., Comoro Is.; id. t. c. p. 196, pl. ix, fig. 1: *Z. demeryi* Büttikofer = *Z. senegalensis*; id. t. c. p. 173: *Z. obsoleta* Büttikofer = *Z. senegalensis*, id. l. c.: *Z. stuhlmanni* Reichenow, *Z. flavilateralis* Reichenow, and *Z. superciliosa* Reichenow = *Z. senegalensis*; id. l. c.: *Z. angazive* Milne-Edwards & Oustalet = *Z. kirki*; id. t. c. p. 178: *Z. perspicillata* Shelley = *Z. eurycricota*; id. t. c. p. 182: *Z. scotti* Neumann = *Z. jacksoni*; id. t. c. p. 184: *Z. atmorei* Sharpe = *Z. capensis*; id. t. c. p. 188: *Z. gloriosa* Ridgway = *Z. madagascariensis*; id. t. c. p. 194.  
*Malacirops e-newtoni*, figured; id. t. c. pl. ix, fig. 2.  
*Speirops leucophæa*, figured; id. t. c. pl. viii, fig. 2.  
*Tephros ruki*, notes on; HARTERT, Nov. Zool. vii, p. 3.

### Family DICÆIDÆ.

- Dicæum arfakianum*, n. sp., Arfak Mts., New Guinea; FINSCH, Notes Leyden Mus. xxii, p. 70: *D. flammeum*, in South Borneo; BÜTTIKOFER, Notes Leyden Mus. xxi, p. 211 note.  
*Pardalotus punctatus*, *P. assimilis*, and *P. ornatus*, nests described; HALL, J. Agric. W. Austral. ii, pp. 324-329 cum fig.: *P. assimilis* Ramsay = *P. affinis* Gould; id. Victorian Natural. xvii, p. 19 & 20: field notes on a phase of; id. t. c. pp. 20-22, with figure of nest and eggs: said to be foster-parent to a Cuckoo; id. t. c. pp. 40 & 41: *P. punctatus*, figured; BUTLER, Avicult. Mag. vi, pp. 165-167, pl. ii.

### Family NECTARINIIDÆ.

- Nectarinia takaze unisplendens*, n. subsp., Kifinika, Kilimanjaro; NEUMANN, J. Ornith. 1900, p. 300: *N. subfamosa* Salvadori and *N. ænigularis* Sharpe = *N. cupreonitens*; SHELLEY, B. Africa ii, p. 21: *N. deckeni* Höhnelt = *N. johnstoni*; id. t. c. p. 22: *N. melanogastra*, figured; id. t. c. pl. i, fig. 2: *N. jacksoni* Neumann = *N. takaze*; id. t. c. p. 26: *N. kilimensis*, figured; id. t. c. pl. i, fig. 1: *N. gadawi* Bocke = *N. kilimensis*; id. t. c. p. 28.  
*Æthopyga anomala*, n. sp., Lower Siam; RICHMOND, P. U. S. Mus. xxii, p. 319.



- Cinnyris chloropygia* and its allies; HARTERT, Nov. Zool. vii, p. 51: *C. venusta* and allies, note on; SHARPE, Ibis 1900, pp. 495-497: *C. verticalis*, in Uehle, C. E. Africa; REICHENOW, Ornith. Monber. viii, p. 4: *C. frenata*, nest and eggs described; ROBINSON & LAVEROCK, Ibis 1900, p. 633: *C. gutturalis*, nest and eggs described; MARSHALL, t. c. p. 236: *C. gutturalis inestimata*, n. subsp., East Africa; HARTERT in Ansorge's 'Under the African Sun' App. p. 351: *C. g. damarensis* Reichenow = *C. g. inestimata*; HARTERT, Nov. Zool. vii, p. 51: *C. scioana* (Salvad.) = *C. cruentata* (Rupp.); GRANT, Ibis 1900, p. 144: *C. castaneiventris* Madarasz = *C. eboensis* Jard.; HARTERT, Nov. Zool. vii, p. 50: *C. chaldeus* Büttikofer = *C. cupreus*; SHELLEY, B. Africa ii, Part i, p. 36: *C. nesophilus*, figured; id. t. c. pl. 2, fig. 2: *C. falkensteini*, figured; id. t. c. pl. 3, fig. 1: *C. erikssoni* Trimen = *C. ludoviciensis*; id. t. c. p. 74: *C. mediocris*, figured; id. t. c. p. 79: *C. ansorgii* Hartert = *C. reichenowi*, id. t. c. p. 82: *C. fulleborni*, figured; id. t. c. pl. iv, fig. 1.
- Chalcomitra senegalensis lamperti* (Reichenow) = *C. senegalensis*; id. t. c. p. 91: *C. gutturalis inestimata* (Hartert) = *C. gutturalis*; id. t. c. p. 93: *C. scioana* Salvadori = *C. cruentata*; id. t. c. p. 100: *C. bradshawi* Sharpe = *C. diminuta*; id. t. c. p. 105: *C. scapulatus* (Roche-brune) = *C. fuliginosa*; id. t. c. p. 109.
- Elæocerthis fischeri* (Reichenow) = *E. verreauxi*; id. t. c. p. 116: *E. thomensis*, figured; id. t. c. pl. 5, fig. 2.
- Cyanomitra ragazzi* (Salvadori) = *C. obscura*; id. t. c. p. 125: *C. bohnendorffi* (Reichenow) and *C. viridisplendens* (Reichenow) both = *C. verticalis*; id. t. c. p. 127: *C. newtoni*, figured; id. t. c. pl. 5, fig. 1: *C. obscura neglecta*, n. subsp., Kibuesi, E. Africa; NEUMANN, J. Ornith. 1900, p. 297.
- Anthothreptes orientalis*, figured; SHELLEY, Birds Africa ii, pl. 4, fig. 2.

### Family MELIPHAGIDÆ.

- Myromela albigula*, figured; HARTERT, Nov. Zool. vii, pl. iv, fig. 1.
- Melithreptus albigularis*, nest and eggs described; LE SOUËF, Ibis 1900, p. 463.
- Glycyphila subocularis*, nest and eggs described; id. t. c. pp. 463 & 464: *G. squamata*, from Dammer Isl.; HARTERT, Nov. Zool. vii, pp. 16 & 17.
- Entomophila picta*, nest and eggs described; NORTH, Victorian Natural. xvii, p. 127.
- Ptilotis proxima*, n. sp., German New Guinea; MADARASZ, Ornith. Monber. viii, p. 3: *P. gracilis*, nest and eggs described; LE SOUËF, Ibis 1900, pp. 615 & 616.
- Entomyza cyanotis harterti*, n. subsp., North Queensland; ROBINSON & LAVEROCK, Ibis 1900, p. 635.
- Philemon argenteiceps*, eggs described; LE SOUËF, Ibis 1900, pp. 460 & 461: *P. nove guineæ*, nest and eggs described; id. t. c. pp. 613-615, fig. 2.
- Moho nobilis*, figured; ROTHSCHILD, Avif. Laysan, Part iii, pl. lxxii: *M. apicalis*, pl. lxxiii: *M. bishopi*, pl. lxxiv: *M. braccatus*, pl. lxxv.
- Chæotoptila angustipluma*, figured; id. t. c. pl. lxxi.

### Family CERTHIIDÆ.

- Certhia familiaris* and its allies; HARTERT, Nov. Zool. vii, p. 525: notes on; KLEINSCHMIDT, Ornith. Monber. viii, p. 169: *C. rhenana*, n. sp., Rhine Provinces; id. t. c. p. 169.
- Climacteris weiskei*, n. sp., N. Queensland; REICHENOW, Ornith. Monber. viii, p. 187.

## Family MNIOTILTIDÆ.

- Dendroica discolor* and *D. kirtlandi*, near Toronto; SAMUEL, Auk xvii, p. 391: *D. striata*, *D. castanea*, *D. cerulea*, *D. blackburniæ*, in Colombia; ALLEN, t. c. pp. 366 & 367: *D. cerulea*, nesting habits; SAUNDERS, t. c. pp. 358-362: *D. achrustera*, nomen emend. pro *D. bahamensis* Maynard nec Cory; BANGS, t. c. p. 292.
- Geothlypis trichas* and subspecies; PALMER, Auk xvii, pp. 216-242: *G. trichas modestus*, n. subsp., Mexico; NELSON, t. c. p. 259: *G. trichas ignota*, its proper name; CHAPMAN, t. c. p. 389: *G. agilis* and *G. trichas*, in Colorado; AIKEN, t. c. p. 298: *G. cucullata* (Lath.) vice *G. velata* (Vieill.): *G. nelsoni* nomen emend. pro *G. cucullata* Salv. & Godm.: RICHMOND, t. c. p. 179: *G. maynardi*, n. sp., Bahamas; BANGS, t. c. pp. 290 & 291.
- Basileuterus belli scitulus*, n. subsp., Highlands of Chiapas and Guatemala; NELSON, Auk xvii, p. 268.
- B. conspicillatus* Salvin & Godman = *B. cinereicollis* Sclater; ALLEN, Bull. Amer. Mus. xiii, pp. 175 & 176.
- Wilsonia canadensis*, in Colorado; AIKEN, Auk xvii, p. 298.

## Family MOTACILLIDÆ.

- Motacilla nigricotis*, [potuis melanotis] n. sp., Orange river and Limpopo, S. Africa; SHELLEY, B. Africa ii, Part II, pp. 266-268, pl. 12, fig. 2: *M. vidua*, figured; id. t. c. pl. 12, fig. 1: *M. borealis* and *M. cinereicapilla* are subspecies of *M. flava*; id. t. c. pp. 286 & 287: *M. melanocephala* Licht. has priority over *M. feldeggii* Michah.; id. t. c. p. 291: *M. boarula schmitzi*, n. subsp., Madeira; TSCHUSI, Ornith. Jahrb. xi, p. 223: *M. raii*, at Beaulieu; HINXMAN, Ann. Scott. Nat. Hist. 1900, p. 48.
- Anthus lineiventris*, in N. Nyasa Land; REICHENOW, Ornith. Monber. viii, p. 4.
- A. crenatus*, figured; SHELLEY, B. Africa ii, Part II, pl. 13, fig. 2: *A. calthorpeæ*, figured; id. t. c. pl. 14, fig. 1: *A. brachyurus*, fig. 2: *A. melindaæ*, n. sp., Melinda, E. Africa; id. t. c. pp. 305 & 306: *A. gouldi* Fraser is a subspecies of *A. pyrrhonotus* (Vieill.); id. t. c. p. 307: *A. lineiventris*, figured; id. t. c. pl. 13, fig. 1: *A. vaalensis*, n. sp., Northern Natal and Transvaal; id. t. c. p. 311: *A. cockburniæ* Oates = *A. sordidus*; id. t. c. p. 314: *A. rufulus cameroonensis*, n. subsp., Camaroons; id. t. c. p. 320: *A. spipoletta*, in Sussex; TICEHURST, Zoologist 1900, p. 278.
- Macronyx fulleborni*, n. sp., Unika Land, N. of Lake Nyasa; REICHENOW, Ornith. Monber. viii, p. 39.

## Family ALAUDIDÆ.

- Pseudalamon delamerei*, n. sp., Athi River, British East Africa; SHARPE, Bull. B. O. C. x, p. cii.
- Otocoris alpestris praticola*, nesting in Maine; SWAIN, Auk xvii, pp. 387 & 388: *O. balcanica*, specimens exhibited; ROTHSCHILD, Bull. B. O. C. x, p. liii.
- Tephrocorys cinerea* and its allies; HARTERT, Nov. Zool. vii, p. 47.
- Spizocorys athensis*, n. sp., Athi River, British East Africa; SHARPE, Bull. B. O. C. x, p. ci.
- Mirafraga africana* and its allies; HARTERT, Nov. Zool. vii, pp. 45 & 46: *M. a. transvaalensis*, n. subsp., Transvaal; id. t. c. p. 45: *M. a. tropicalis*, n. subsp., Tropical E. Africa; id. t. c. p. 45: *M. a. athi*,

- n. subsp., Athi Plain, British E. Africa; id. t. c. p. 46: *M. cinnamomea*, notes on; id. t. c. p. 46: *M. nigrescens*, n. sp., Elton Pass, N. of Konde Land; REICHENOW, Ornith. Monber. viii, p. 39.  
*Ammomanes saturatus*, n. sp., Southern Arabia; GRANT, Nov. Zool. vii, p. 249.  
*Pyrhulauda harrisoni*, n. sp., Lake Rudolf, Equat. Africa; id. Bull. B. O. C. xi, pp. 30 & 31.

## Family FRINGILLIDÆ.

- Perisospiza* nomen emend. pro *Pycnorhamphus* Hume nec Rosenberg; OBERHOLSER, P. U. S. Mus. xxii, p. 227.  
*Chloridops kona*, figured; ROTHSCHILD, Avif. Laysan, Part III, pl. lxx.  
*Astragalinus tristis pallidus*, in Colorado; AIKEN, Auk xvii, p. 298.  
*Linaria*, notes on various species; DEICHLER, J. Ornith. 1900, pp. 371 & 372.  
*Acanthis cannabina*, in Westchester County, New York; THAYER, Auk xvii, pp. 388 & 389.  
*Cannabina cannabina minor*, note on; TSCHUSI, Ornith. Jahrb. xi, p. 223.  
*Montifringilla altaica* (Eversmann, 1848) has priority over *M. sordida* (Stoliczka); OBERHOLSER, P. U. S. Mus. xxii, p. 225.  
*Leucosticte kadiaka*, n. sp., Kadiak Isl., Alaska; MCGREGOR, Condor iii, No. 1.  
*Rhyncostruthus percivali*, n. sp., S. Arabia; GRANT, Bull. B. O. C. xi, p. 30.  
*Passer domesticus*, note on the sexual differences; BUTLER, Zoologist 1900, pp. 74 & 75: nesting habits; STEELE-ELLIOTT, t. c. p. 424: READ, t. c. p. 519: *P. rutilans*, eggs described; LA TOUCHE, Ibis 1900, p. 35: *P. diffusus* and allies, notes on; HARTERT, Nov. Zool. vii, pp. 43-45: *P. gongonensis* Oust., a large form of *P. swainsoni*; id. t. c. pp. 44 & 45: *P. motitensis* and allies; id. t. c. pp. 42 & 43.  
*Linurgus kilimensis*, figured; NEUMANN, J. Ornith. 1900, Taf. II, fig. 3.  
*Serinus sharpei*, n. sp., Marangu, Kilimanjaro; id. t. c. p. 287: *S. melanochrous*, n. sp., Ukinga, N. of Lake Nyasa; REICHENOW, Ornith. Monber. viii, p. 122.  
*Emberiza citrinella*, red-throated variety from the Yenesei Valley; POPHAM, Bull. B. O. C. xi, p. 41: *E. cioides*, nest and eggs described; LA TOUCHE, Ibis 1900, pp. 36 & 37.  
*Citrinella corsicana*, n. sp., Corsica; KONIG, Ornith. Monber. viii, p. 183.  
*Zonotrichia macconnelli*, n. sp., Mt. Roraima, British Guiana; SHARPE, Tr. Linn. Soc. London (2), Zool. viii, p. 53, pl. 4, fig. 1: *Z. pileata*, fig. 2, figured; id. t. c.: *Z. querula*, in California; EMERSON, Condor ii, p. 145.  
*Amphispiza bilineata pacifica*, n. subsp., Mexico; NELSON, Auk xvii, p. 267.  
*Ammodramus bairdi*, on Long Island; HELME, Auk xvii, p. 296.  
*Melospiza sanaka*, n. sp., Sanak Isl., Alaska; MCGREGOR, Condor iii, No. 1: *M. melodia kenaiensis*, n. subsp., Alaska; RIDGWAY, Auk xvii, p. 29.  
*Passerella iliaca insularis*, n. subsp., Alaska; id. t. c. p. 30: *P. iliaca annectens*, n. subsp., Alaska; id. t. c. p. 30.  
*Pipilo maculatus falcifer*, n. subsp., San Francisco Bay Region; MCGREGOR, Condor ii, p. 43.  
*Zamelodia melanocephala microrhyncha*, n. subsp., Pacific coast region of California, Oregon and Washington; GRINNELL, Condor ii, p. 128.  
*Phrygilus princestonianus*, n. sp., Patagonia; SCOTT, Bull. B. O. C. x, p. liv.

## Family DREPANIDÆ.

- Drepanidæ*, a key to the genera; ROTHSCILD, Avif. Laysan, Part III, p. 211.  
*Heterorhynchus lucidus*, figured; id. t. c. pl. liii.  
*Hemignathus ellisianus*, figured; id. t. c. pl. xlvii.  
*Drepanorhamphus*, n. g., type *D. funereus* (Newton); id. t. c. pp. 163-165, pl. lxii.  
*Drepanis pacifica*, figured; id. t. c. pl. lxi.  
*Palmeria dolei*, figured; id. t. c. pl. lx.  
*Chlorodrepanis*, n. g. [for *Himatione* Cab., part], type *C. stejnegeri* (Scott Wilson); id. t. c. p. 131: key to the species of the genera *Himatione* and *Chlorodrepanis*; id. t. c. p. 131.  
*C. virens*, figured; id. t. c. pl. lix, fig. 1: nest and eggs, pl. lxxxi, fig. 2: *C. chloris*, pl. lix, fig. 2: *C. wilsoni*, fig. 3: *C. stejnegeri*, fig. 4.  
*Oreomyza perkinsi*, n. sp., Hawaii; id. t. c. p. 129.  
*Loxops coccinea*, figured; id. t. c. pl. lxiii, figs. 1-4: *L. ochracea*, pl. lxiv: *L. rufa*, pl. lxv: *L. cæruleirostris*, pl. lxvi: *L. wolstenholmei* = *L. rufa* (Bloxam); id. t. c. p. 177.  
*Pseudonestor xanthophrys*, figured; id. t. c. p. lxvii.  
*Telespiza flavissima* = *T. cantans*; id. t. c. p. 199.  
*Rhodacanthis palmeri*, figured; id. t. c. pl. lxviii: *R. flaviceps*, pl. lxix.

## Family CÆREBIDÆ.

- Dacnis berlepschi*, n. sp., N.W. Ecuador; HARTERT, Bull. B. O. C. xi, p. 37.

## Family TANAGRIDÆ.

- Calliste emiliae*, n. sp., Buenaventura, U. S. Colombia; DALMAS, Bull. B. O. C. xi, p. 35: *C. johannæ*, n. sp., Buenaventura, Colombia; id. t. c. p. 36: from N. Ecuador (Paramba); HARTERT, t. c. p. 40.  
*Tanagra berlepschi*, n. sp., Tobago; DALMAS, Mem. Soc. zool. France xiii, pp. 136 & 137.  
*Buarremon simonsi*, n. sp., Loja, Ecuador, *B. pallidiceps*, n. sp., Oña, Ecuador; SHARPE, Bull. B. O. C. xi, p. 2.  
*Buarremon assimilis*, young in first plumage described; ALLEN, Bull. Amer. Mus. xiii, p. 167.

## Family PLOCEIDÆ.

- Ploceidæ*, notes on; FINN, J. Asiat. Soc. Bengal (2) lxviii, pp. 250-257.  
*Penthetria psammacromia*, n. sp., Ukinga, N.E. of Nyasa Land; REICHERNOW, Ornith. Monber. viii, p. 39.  
*Lagonosticta congica*, in Abyssinia; GRANT, Ibis 1900, p. 127.  
*Sporægynthus margaritæ*, figured; id. t. c. pl. iii, fig. 1 = *Estrela ochrogaster* Salvad.; id. t. c. p. 304 note; SALVADORI, t. c. p. 399.  
*Poephila heeki*, n. sp., Australia; HEINROTH, Ornith. Monber. viii, pp. 22 & 23: id. J. Ornith. 1900, p. 248: *P. nigrotecta*, nest and eggs described; LE SOUËF, Ibis 1900, p. 461: *P. acuticauda*, figured; SETH-SMITH, Avicult. Mag. vi, pp. 257-259, pl. iv: *P. personata*, figured; PHILLIPPS, Avicult. Mag. vi, pp. 259-262, pl. iv.  
*Munia malacca*, note on the interbreeding; FINN, Avicult. Mag. vi, pp. 182 & 183.

- Erythrura*, notes on the genus: HARTERT, Nov. Zool. viii, pp. 6 & 7:  
*E. trichora woodfordi*, n. subsp., Solomon Is.: id. t. c. p. 7: *E. trichora papuana*, n. subsp., New Guinea: id. t. c. p. 7.  
*Estrilda everetti*, n. sp., Mapocuti, Mozambique: SHARPE, Ibis 1900, p. 119: *E. delamerei*, n. sp., Athi River, British East Africa: id. Bull. B. O. C. x, p. cii: *E. warviti*, n. sp., Uchebe, E. Africa: REICHENOW, Ornith. Monber. viii, p. 40.  
*Anaplectes rubigena*, n. sp., Chiswa, Nyasaland: SHILLERY, B. Africa ii, Part II, p. 341.  
*Hyphantornis camberni*, n. sp., Mt. Kenya: SHARPE, Bull. B. O. C. x, p. xxxv: *H. vitellinus ulmanni*, n. subsp., Ulu Mt., E. Africa: NUTMANS, J. Ornith. 1900, p. 223: *H. behndorffi*, notes on: HARTERT, Nov. Zool. vii, p. 40.  
*Melanopteryx weynsi*, n. sp., Upper Congo: DUBOIS, Ornith. Monber. viii, p. 69.  
*Brachycope*, n. g. type *B. anomala*, n. sp., E. Africa: REICHENOW, J. Ornith. 1900, p. 249.  
*Ploceus fulleborni*, n. sp., Rupira, N. of Lake Nyasa: id. Ornith. Monber. viii, p. 99: *P. anomalus*, notes on: HARTERT, Nov. Zool. vii, p. 40: *P. mangar* Horsf., natural history, structure of nests: ZEHNTNER (579): *P. rufedgii* and *P. megarhynchus*, notes on the plumage; FINX, Avicult. Mag. vi, pp. 145-147.

### Family ICTERIDÆ

- Ostinops decumanus insularis*, n. subsp., Tobago: DALMAS, Mem. Soc. zool. France xiii, p. 137.  
*Cassidix oryzivora*, nesting habits: SCHULZ, J. Ornith. 1900, p. 242.  
*Dolichonyx oryzivorus*, its food: BEAL, Bull. U. S. Dep. Agric. Biol. No. 13, pp. 12-23: in Colombia: ALLEN, Auk xvii, p. 365.  
*Calothorus aneus assimilis*, n. subsp., Mexico: NELSON, Auk xvii, p. 266.  
*Molothrus minimus*, n. sp., Tobago: DALMAS, Mem. Soc. zool. France xiii, p. 138: *M. ater*, its food: BEAL, Bull. U. S. Dep. Agric. Biol. No. 13, pp. 22-30.  
*Agelaius phoeniceus*, its food: id. t. c. pp. 33-44.  
*A. phoeniceus sonoriensis*, note on: NELSON, Auk xvii, pp. 125 & 126.  
*Xanthocephalus xanthocephalus*, its food: BEAL, Bull. U. S. Dep. Agric. Biol. No. 13, pp. 30-33.  
*Sturnella*, a study of the genus; with notes on the geographical variations of the species: CHAPMAN, Bull. Amer. Mus. xiii, pp. 297-330, figg. 1-8.  
*S. magna alticola*, n. subsp., Mexico: NELSON, Auk xvii, pp. 266 & 267.  
*Icterus spurius*, nesting near Toronto: SAMUEL, Auk xvii, p. 392.  
*Scolecophagus carolinus* and *S. cyanocephalus*, notes on the food: BEAL, Bull. U. S. Dep. Agric. Biol. No. 13, pp. 45-52.  
*Quiscalus quiscula* and *Q. major*, notes on the food: id. t. c. pp. 53-76.  
*Q. macrourus obscurus*, n. subsp., S.W. Mexico: NELSON, Auk xvii, p. 267.

### Family ORIOLIDÆ

- Oriolus rolleti* and *O. latior*, notes on: HARTERT, Nov. Zool. vii, pp. 38 & 39: *O. meneliki*, figured: GRANT, Ibis 1900, pl. ii=*O. monachus* juv.; SALVADORI, t. c. p. 398: cf. also GRANT, t. c. pp. 565-567.  
*Sphecothebes flaviventris*, note on the colour-change, and description of eggs: ROBINSON & LAVEROCK, Ibis 1900, p. 626.  
*Mimeta sagittata* (Lath.) vice *M. viridis* (Lath.): ROBINSON & LAVEROCK, Ibis 1900, pp. 625 & 626.

## Family DICRURIDÆ.

- Chaptia anea*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 464.  
*Buchanga assimilis*, nest and eggs described; MARSHALL, Ibis 1900, pp. 224 & 225.  
*Dissemurus paradiseus*, in Hainan; GRANT, P. Zool. Soc. London 1900, p. 465.

## Family EULABETIDÆ.

- Aplonis kistlitzii*, nests and eggs described; HARTERT, Nov. Zool. vii, p. 6:  
*A. maxwelli*, n. sp., Santa Cruz Isl., New Hebrides; FORBES, Bull. Liverp. Mus. ii, p. 116.  
*Amydrua canolimbatus*, n. sp., W. of Nyasa Land, German E. Africa; REICHENOW, Ornith. Monber. viii, p. 99.  
*Lamprocolius massaicus*, n. sp., Guasso, Massailand; NEUMANN, J. Ornith. 1900, p. 280.

## Family STURNIDÆ.

- Sturnus vulgaris*, notes on; FORREST, Zoologist 1900, pp. 131-141, 479: remarkable flocking to Cramond Island; CAMPBELL, Ann. Scott. Nat. Hist. 1900, pp. 182 & 183: nesting habits; STEELE-ELLIOTT, Zoologist 1900, p. 425.

## Family PARADISEIDÆ.

- Birds of Paradise, notes on; RENSHAW, Nature Notes xv, pp. 164-167.  
*Ciccinnurus lyroggyrus*, n. sp., New Guinea; CURRIE, P. U. S. Mus. xxii, pp. 497-499.  
*Diphyllodes gulielmi tertii* is from German New Guinea; ROTHSCHILD, Bull. B. O. C. xi, p. 30.  
*Parotia duivenbodei*, n. sp., Dutch New Guinea; id. op. cit. x, p. c.  
*Manucodia atra*, nest and eggs described; LE SOUËF, Ibis 1900, pp. 612 & 613, fig. 1.

## Family CORVIDÆ.

- Corvus cupensis*, eggs described; MARSHALL, Ibis 1900, pp. 222 & 223.  
*Gazzola unicolor*, n. sp., Banggai, Sula Is.; ROTHSCHILD & HARTERT, Bull. B. O. C. xi, pp. 29 & 30.  
*Nucifraga caryocatactes*, in Northern Germany in August; THIENEMANN, QUISTORF & REICHENOW, Ornith. Monber. viii, pp. 156 & 157: *N. c. leptorhynchus* Blasius, near Brunswick; BLASIUS, t. c. p. 157: notes on species; REICHENOW, J. Ornith. 1900, p. 244: *N. relicta* not separable from *N. caryocatactes*; HARTERT, Nov. Zool. vii, p. 626: *N. columbiana*, notes on the nest and eggs; JOHNSON, Condor ii, pp. 49-52, cum fig.  
*Urocissa whiteheadi*, described, also nest and eggs; GRANT, P. Zool. Soc. London 1900, pp. 462 & 463.  
*Garrulus glandarius*, its variations in Western Europe; HARTERT, Nov. Zool. vii, p. 534.

- Cyanocitta stelleri carbonacea*, n. subsp., Coast region of Oregon and California; GRINNELL, Condor ii, pp. 127 & 128.
- Xanthoura yncas galeata*, n. subsp., Colombia; RIDGWAY, Auk xvii, p. 27:  
*X. luxuriosa glaucescens*, n. subsp., Lower Rio Grande Valley; id. t. c. p. 28: *X. luxuriosa virida*, n. subsp., Southern Mexico; id. t. c. p. 28:  
*X. luxuriosa speciosa*, n. subsp., Mexico; NELSON, t. c. pp. 265 & 266.
- Struthidea cinerea*, figured; NORTH, Agric. Gaz. N. S. W. xi, pl. xv, fig. 2: note on the nest-building; LE SOUËF, Knowledge xxiii, p. 93 cum fig.
- Corcorax melanorhamphus*, note on nest-building; id. t. c. pp. 92 & 93 cum fig.

# IV. REPTILIA AND BATRACHIA.

BY

G. A. BOULENGER, F.R.S.

## CONTENTS.

	Page		Page
I. TITLES . . . . .	1	Reptilia ( <i>continued</i> ).	
II. FAUNÆ . . . . .	13	Emydosauria . . . . .	23
III. REFERENCES ARRANGED		Chelonia . . . . .	23
SYSTEMATICALLY		Ichthyosauria . . . . .	24
Reptilia and Batrachia . . . . .	15	Plesiosauria . . . . .	24
Reptilia . . . . .	15	Rhynchocephalia . . . . .	24
Squamata . . . . .	15	Anomodontia . . . . .	25
Lacertilia . . . . .	15	Batrachia . . . . .	25
Rhipitoglossa . . . . .	19	Ecaudata . . . . .	25
Pythonomorpha . . . . .	20	Caudata . . . . .	29
Ophidia . . . . .	20	Apoda . . . . .	31
Ornithosauria . . . . .	22	Stegocephala . . . . .	31
Dinosauria . . . . .	22		

## I. TITLES.\*

- ACLOQUE, A. Faune de France. Les Poissons, les Reptiles, les Batraciens, les Protochordes. Paris, 1900, 18°, pp. 339-548, figg.
- ANCEL, P. Recherches sur le développement des Glandes cutanées de la Salamandre terrestre. C.R. Soc. Biol. lii, pp. 959-961.
- . A propos de l'origine des Glandes cutanées de la Salamandre. T. c. pp. 1059 & 1060.
- ANDERSON, J. On the Presence of *Echis coloratus* Günther, in Africa. Ann. Nat. Hist. (7) vi, pp. 419-425.

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.



- ANDERSSON, L. G. Catalogue of the Linnean Type Specimens of Linneus's Reptilia in the Royal Museum in Stockholm. Bih. Svenska Ak. xvii. iv. No. 1. 29 pp.
- ANDREWS, C. W. On a cast of a portion of the Jaw of an *Ichthyosaurus*. P. Z. S. 1900, p. 690, fig.
- . A New Species of Chelonian *Podocnemis egyptiorum* from the Lower Miocene of Egypt. Geol. Mag. 2 Dec. iv. vii. pp. 1 & 2, pl. i.
- ARNOLD, J. Die Demonstration der Nervenendaustretung in den Papille fungiformes der lebenden Frösche. Anat. Anz. xvii. pp. 517-519.
- BAGLIOSI, S. Der Athmungsmechanismus des Frosches. Arch. Physiol. 1900, Suppl. pp. 33-59.
- BASCHI, A. Neotenia nel *Triton vulgaris subsp. meridionalis*. Monit. Zool. ital. xi. pp. 194-200, figg.
- . Rudimenti di un terzo elemento scheletrico (*Parañbula*) nella gambe di alcuni rettili. T. c. pp. 231-243, figg.
- BARROWS, ANNE I. Respiration of *Desmognathus*. Anat. Anz. xviii. pp. 461-464, figg.
- BATAILLON, E. La segmentation parthénogénétique expérimentale chez les Amphibiens et les Poissons. C.R. Ac. Sci. cxxx, pp. 115-118.
- BAUER, F. Osteologische Notizen über Ichthyosaurier. Anat. Anz. xviii. pp. 574-588, figg.
- BAZSOGYAS, P. A. Notes sur les Chéloniens terrestres de Roumanie. Bull. Soc. Bucarest ix. pp. 273-283, figg.
- BENSLY, R. R. The Oesophageal Glands of Urodela. Biol. Bull. ii. pp. 97-104, figg.
- BERNARD, H. M. Studies in the Retina: Rods and Cones in the Frog and in some other Amphibia. Quart. J. Micr. Sci. xliii. pp. 23-47, pl. iii.
- BETHENCOURT-FERREIRA, J. Sobre alguns exemplares pertencentes á fauna do Norte de Angola (Reptis, Batrachios, Aves e Mammíferos). J. Sci. Lisb. (2) vi. pp. 48-54.
- BLANC, H. Développement de l'épiphyse et de la parafyse chez la *Salamandra atra*. Arch. Sci. Nat. (4) x. pp. 571 & 572.
- BOUTIS, M. Histogénèse de la Glande génitale femelle chez *Rana temporaria* (L.). Arch. Biol. xvii. pp. 201-283, pls. ix-xii.
- . Expulsion d'ovules primordiaux chez les têtards de Grenouille rousse. Bibliog. anat. viii. pp. 53-59, figg.
- . Ébauche génitale primordiale chez *Rana temporaria* (L.). T. c. pp. 103-108.
- BOULENGER, G. A. Reptilia. In C. W. ANDREWS' Monograph of Christmas Island (Indian Ocean). London, 1900, 8vo, pp. 51-54, pl. vii.
- . On a new Blind Snake from Lifu, Loyalty Islands. WILLEY'S Zool. Results v. pp. 603 & 604, fig.
- . Reptiles and Batrachians. Victoria History of Counties of England. Hampshire and the Isle of Wight i. pp. 204-207.
- . Report on a Collection made by Messrs F. V. McConnell and J. J. Quelch at Mount Roraima in British Guiana. Reptiles, Batrachians. Tr. Linn. Soc. London (2) viii. pp. 53-56, pl. v.

- [BOULENGER, G. A.] On the Reptiles, Batrachians, and Fishes collected by the late Mr John Whitehead in the Interior of Hainan. P. Z. S. 1899, pp. 956-962, pls. lxi-lxix.
- , Descriptions of new Reptiles and Batrachians from Borneo. Op. cit. 1900, pp. 182-187, pls. xiv-xvii.
- , A List of the Batrachians and Reptiles of the Gaboon (French Congo), with Descriptions of new Genera and Species. T. c. pp. 433-456, figg., pls. xxvii-xxxii.
- , Exhibition of, and Remarks upon, a specimen of a large Bornean Tortoise. T. c. p. 661.
- , Descriptions of new Reptiles from Perak, Malay Peninsula. Ann. Nat. Hist. (7) v, pp. 306-308.
- , Descriptions of new Batrachians and Reptiles collected by Mr P. O. Simons in Peru. Op. cit. vi, pp. 181-186.
- , Descriptions of new Batrachians and Reptiles from the Larut Hills, Perak. T. c. pp. 186-193.
- , Description of a new Lizard from Jamaica. T. c. pp. 193 & 194.
- , Description of a new Lizard from British East Africa. T. c. pp. 194 & 195.
- , Description of a new Snake of the Genus *Ablabes* from Burma. T. c. p. 409.
- , Descriptions of two new Lizards from Selangor. J. Bombay Soc. xiii, pp. 333 & 334, pl. —.
- , Description of a new Lizard from the Batu Caves, Selangor. T. c. p. 335.
- , Description of a new Snake from the Perak Hills. T. c. p. 336.
- BOWERS, MARY A. Peripheral Distribution of the Cranial Nerves of *Spelerpes bilineatus*. P. Amer. Ac. xxxvi, pp. 179-192, 2 pls.
- BRAUER, A. Zur Kenntniss der Entwicklung der Excretionsorgane der Gymnophionen. Zool. Anz. xxiii, pp. 353-358.
- BROMAN, I. Ueber Riesenspermatiden bei *Bombinator igneus*. Anat. Anz. xvii, pp. 20-30, figg.
- , Ueber Bau und Entwicklung der Spermien von *Bombinator igneus*. T. c. pp. 129-145, figg.
- , Ueber die Histogenese der Riesenspermien bei *Bombinator igneus*. Verh. Anat. Ges. 1900, pp. 157-164, figg.
- BROOM, R. On a new Theriodont Reptile (*Ictidosuchus primævus*) from the Karoo Beds, South Africa. Ann. Nat. Hist. (7) vi, pp. 314-316, fig.
- BURCKHARDT, R. On *Hyperodapedon gordonii*. Geol. Mag. (2) Dec. iv, vii, pp. 486-492, 529-535, figg., pl. xix.
- CAMERANO, L. Ricerche intorno alla variazione del '*Bufo vulgaris*' Laur. Atti Acc. Torino (2) i, pp. 81-153, 2 pls.
- CAPELLINI, G. Le piastre marginali della *Protosphargis veronensis*. Rend. Acc. Bologna (2) ii, 1898, pp. 97-113, pl. —.
- CIACCIO, G. V. Parallelo tra gli spermatozoidi del *Triton cristatus* e quelli della *Rana esculenta*. Rend. Acc. Bologna (2) iii, 1899, pp. 95-102, pl. —.

- COPE, E. D. The Crocodilians, Lizards, and Snakes of North America. Rep. U. S. Nat. Mus. f. 1898, pp. 153-1270, figg., 36 pls. (1900).
- COX, P. Fresh-water Fishes and Batrachia of the Peninsula of Gaspé, P. Q., and their distribution in the Maritime Provinces of Canada. Tr. R. Soc. Canada (2) v, pp. 141-154.
- CUNNINGHAM, J. T. Sexual Dimorphism in the Animal Kingdom. A Theory of the Evolution of Secondary Sexual Characters. London, 1900, 8vo, 317 pp., figg.
- DEPÉRET, C. Sur les Dinosauriens des étages de Rognac et de Vitrolles, du pied de la Montagne-Noire. C.R. Ac. Sci. cxxx, pp. 637-639.
- . Note sur de nouveaux Dinosauriens du Crétacé supérieur de la Montagne Noire. Bull. Soc. geol. France xxviii, p. 530.
- EIGENMANN, C. H. The Eyes of the Blind Vertebrates of North America. II. The Eyes of *Typhlomolge rathbuni* Stejneger. Tr. Amer. Micr. Soc. xxi, pp. 49-60, pls. iii & iv.
- . Degeneration in the Eyes of the Cold-blooded Vertebrates of the North American Caves. P. Indiana Ac. 1899, pp. 31-46, figg. Also Science (2) xi, pp. 492-503, figg.
- & DENNY, W. A. The Eyes of the Blind Vertebrates of North America. III. The Structure and Ontogenic Degeneration of the Eyes of the Missouri Cave Salamander, an Account based on material collected with a Grant from the Elizabeth Thompson Science Fund. Biol. Bull. ii, pp. 33-41, figg.
- EISEN, G. A Preliminary Account of the Spermatogenesis of *Batrachoseps attenuatus*, Polymorphous Spermatogonia, Auxocytes and Spermatocytes. Biol. Bull. i, pp. 99-113, figg.
- ELLERMANN, V. Ueber die Schleimsecretion im Eileiter der Amphibien. Anat. Anz. xviii, pp. 182-189, figg.
- FATIO, V. Deux petits Vertébrés nouveaux pour la Suisse (*Sorex pygmaeus* Pall. et *Rana græca* Boul.) et quelques intéressantes variétés. Rev. Suisse Zool. viii, pp. 467-476. Also Arch. Sci. Nat. (4) x, pp. 567-570.
- FAUVEL, A. A. Textes inédits concernant les Tortues de terre gigantesques de l'île Juan de Nove (I. Farquhar) [Océan Indien]. Bull. Mus. Paris 1900, pp. 170-174.
- FAWCETT, J. W. Reptiles and Amphibians of the County of Durham. Naturalist 1900, p. 36.
- FISCHEL, A. Ueber die Regeneration der Linse. Anat. Hefte, Arb. xiv, pp. 1-255, figg., pls. i-ix.
- . Zur Histologie der Urodelen-Cornea und des Flimmerepithels. Op. cit. xv, pp. 233-266, pl. xxvii.
- FISCHER, E. Beiträge zur Kenntniss der Nasenhöhle und des Thränen-nasenganges der Amphibien. Arch. mikr. Anat. lv, pp. 441-478, pls. xxii-xxiv.
- FLETCHER, W. B. The Florida Gopher. P. Indiana Ac. 1899, pp. 46-52.
- FLOWER, S. S. Notes on a Second Collection of Batrachians made in the Malay Peninsula and Siam, from November 1896 to September 1898, with a List of the Species recorded from those Countries. P. Z. S. 1899, pp. 885-916, pls. lix & lx.

- FOWLER, H. W. *Necturus maculosus* Rafinesque, in the Lower Delaware River. *Science* (2) xi, p. 555.
- FRAAS, E. *Zanclodon schützei*, n. sp., aus dem Trigonodusdolomit von Hall. *Jahresh. Ver. Württemb.* lvi, pp. 510-513, figg.
- FÜRBRINGER, M. Zur vergleichenden Anatomie des Brustschulterapparates und der Schultermuskeln. iv. Theil. *Jena Zeitschr.* xxxiv, pp. 215-718, figg., pls. xiii-xvii.
- GADOW, H. *Trichobatrachus*. *Anat. Anz.* xviii, pp. 588 & 589.
- GAMBLE, F. W. The Power of Colour-change in Animals. *Tr. Manchester Micr. Soc.* 1899, pp. 92-106 (1900).
- GAULE, J. Ueber die geschlechtliche Differenz der Muskeln bei Fröschen. *Arch. ges. Physiol.* lxxxiii, pp. 83-88, pl. iii.
- GAUPP, E. Das Chondrocranium von *Lacerta agilis*. Ein Beitrag zum Verständnis des Amniotenschädels. *Anat. Hefte, Arb.* xv, pp. 435-595, figg., pls. xlii-xlvii.
- GEINITZ, E. Ichthyosaurus von Dobbertin in Mecklenburg. *N. Jahrb. Min.* 1900, i, pp. 63 & 64, fig.
- GEINITZ, H. B. Sur *Stereosternum tumidum* Cope, du Musée royal de Minéralogie de Dresde, provenant de São-Paulo (Brésil). *Ann. Soc. geol. Belgique* xiv bis, pp. 37-42, pl. i.
- GERBING, W. *Triton palmatus* im Thüringerwalde. *Zeitschr. Naturw.* lxxii, p. 452.
- GILL, T. The Earliest Use of the Names *Sauria* and *Batrachia*. *Science* (2) xii, p. 730.
- GLAS, E. Ueber die Entwicklung der Milz bei *Tropidonotus natrix*. *SB. Ak. Wien* cix, iii, pp. 265-297, 3 pls.
- GODLEWSKI, E., JUN. Ueber die Einwirkung des Sauerstoffs auf Entwicklung und über den Gaswechsel in den ersten Entwicklungsstadien von *Rana temporaria*. *Bull. Ac. Cracovie* 1900, pp. 232-255, figg.
- GÖLDI, E. A. Hufförmige Verbreitungen an den Krallen von Crocodilembryonen. *Zool. Anz.* xxiii, pp. 149-151.
- GREGORY, EMILY R. Observations on the Development of the Excretory System in Turtles. *Zool. Jahrb. Anat.* xiii, pp. 683-714, pls. xlv-l.
- GÜNTHER, A. *Biologia Centrali-Americana. Batrachia.* Pp. 197-236, pls. lx-lxvi.
- HAASE, A. Untersuchungen über den Bau und die Entwicklung der Haftlappen bei den Geckotiden. *Arch. Naturg.* lxvi, pp. 321-345, pls. xiii & xiv.
- HALLER, B. Vom Bau des Wirbelthiergehirns. II. Theil. *Emys. Morphol. Jahrb.* xxviii, pp. 252-346, pls. xv-xix.
- HANITSCH, R. An Expedition to Mount Kina Balu, British North Borneo. *J. Straits Asiat. Soc.* xxxiv, pp. 49-88, 2 pls.
- HATCHER, J. B. Vertebral Formula of *Diplodocus* (Marsh). *Science* (2) xii, pp. 828-830.
- HOLLAND, W. J. The Vertebral Formula in *Diplodocus* Marsh. *Science* (2) xi, pp. 816-818.

- HOOLEY, R. W. Note on a Tortoise from the Wealden of the Isle of Wight. *Geol. Mag.* (2) Dec. iv, vii, pp. 263-265, figg.
- HOWES, G. B. & SWINNERTON, H. H. On the Development of the Skeleton of the Tuatera, *Sphenodon (Hatteria) punctatus*. *Abstract. P. Z. S.* 1900, pp. 516 & 517.
- JANSENS, J. A. Rapprochements entre les cinèses polliniques et les cinèses sexuelles dans le testicule des Tritons. *Anat. Anz.* xvii, pp. 520-524, figg.
- JENSEN, A. S. Lagoa Santa Egnens Slang. Et Bidrag til det indre Brasiliens Herpetologi. *Vid. Medd.* 1900, pp. 99-111, figg.
- Om *Ophiopsirops nasutus* Du Bocage, og dens Stilling i Reptiliernes System. *T. c.* pp. 317-328, fig., pl. iii.
- KATHARINER, L. Die Nase der im Wasser lebenden Schlangen als Luftweg und Geruchsorgan. *Zool. Jahrb. Syst.* xiii, pp. 415-442, figg., pls. xxvii & xxviii.
- Die Mechanik des Bisses der solenoglyphen Giftschlangen. *Biol. Centrbl.* xi, pp. 45-53, figg.
- KENSALL, J. E. The Reptiles of Hampshire and the Isle of Wight. *P. Hampshire Field Club* iii, 1897, pp. 267-273.
- KNIGHT, W. C. Some New Jurassic Vertebrates. *Amer. J. Sci.* (4) x, pp. 115-119, figg.
- KOELLIKER, A. Gegen die Entstehung von Nervenfasern aus Zellensträngen. *Anat. Anz.* xviii, pp. 511 & 512.
- KOLOMBATOVIĆ, G. Druge Zoologiske Vijesti iz Dalmacije. *Spalato*, 1900, 8vo, 34 pp.
- LAESSECKE, F. Beobachtungen an einigen *Molge*-Arten und ihren Larven. *Zool. Garten* xli, pp. 52-54.
- LAGUESSE, E. Sur la répartition du tissu endocrine dans le pancréas des Ophiidiens. *C.R. Soc. Biol.* lii, pp. 800 & 801.
- LAUBE, G. C. Neue Schildkröten und Fische aus der böhmischen Braunkohlenformation. *Abh. Ver. Lotos* ii, pp. 37-56, pls. i-iv.
- LEBRUN, H. Les Phénomènes de la ponte chez les Batraciens. *Rev. Quest. Sci.* (2) xviii, pp. 645-677.
- LEHRS, P. Die Dalmatiner Würfelnatter (*Tropidonotus tessellatus* Laurenti, var. *flavescens* Werner). *Natur und Haus* viii, pp. 217-219, 244 & 245, fig.
- LEIGHTON, G. The Adder-swallowing Theory from an anatomical point of view. *Zoologist* (4) iv, pp. 393-396, fig.
- LEVY, M. Das Leben der Frösche unter dem Wasser. II. *Zool. Garten* xli, pp. 178-180.
- LINDEN, MARIA V. Die ontogenetische Entwicklung der Zeichnung unserer einheimischen Molche. *Biol. Centrbl.* xx, pp. 144-167, 226-241, figg.
- LIVINI, F. Sviluppo di alcuni organi derivati dalla regione branchiale negli anfibi urodeli. *Monit. Zool. ital.* xi, pp. 365-370, pl. xv.
- LÖNNBERG, E. Reptiles and Batrachians collected in German New Guinea by the late Dr Erik Nyman. *Ann. Nat. Hist.* (7) vi, pp. 574-582.

TITLES.

Rept. 7

- LOYEZ, MARIE. Sur la constitution du follicule ovarien des Reptiles. C.R. Ac. Sci. cxxx, pp. 48-50.
- MARTIN, H. Sur le développement de l'appareil venimeux de la *Vipera aspis*. Évolution du canal venimeux. C.R. Ass. Franc. xxviii, ii, pp. 522-526, pl. v.
- MARTY, P. Le Lézard ocellé (*Lacerta ocellata* Daud.) dans le Cantal. Feuille Natural. xxxi, pp. 27 & 28.
- MAUREL, — & LAGRIFFE, —. Détermination et action des plus hautes températures compatibles avec la vie de la Grenouille. C.R. Soc. Biol. lii, pp. 217-219.
- McLAIN, R. B. Contributions to Neotropical Herpetology. Wheeling, W. Va., 1899, 8vo, 5 pp., 1 pl.
- . Notes on a Collection of Reptiles made by Mr C. J. Pierson at Fort Smith, Arkansas, with Remarks on other Eastern Reptiles. T. c. 5 pp.
- . Critical Notes on a Collection of Reptiles from the Western Coast of the United States. T. c. 13 pp.
- MOCQUARD, F. Liste des Reptiles capturés au cours de ses voyages scientifiques par S. A. S. le Prince Albert I<sup>er</sup> de Monaco. Bull. Mus. Paris 1899, p. 282.
- . Nouvelle contribution à la faune herpétologique de Madagascar. Bull. Soc. Philom. (9) ii, pp. 93-111, pl. ii.
- MOORE, J. P. Post-larval Changes in the Vertebral Articulations of *Spelerpes* and other Salamanders. P. Ac. Philad. 1900, pp. 613-622.
- MORGAN, T. H. Further Experiments on the Regeneration of Tissue composed of parts of two Species. Biol. Bull. ii, pp. 111-119, figg.
- NEUMANN, O. Description of a New Lizard of the genus *Nucras* from Usoga, British East Africa. Ann. Nat. Hist. (7) v, p. 56.
- NEWTON, E. T. On a Remarkable Bone from the Chalk of Cuxton, possibly referable to the Rhynchocephalia. P. Geol. Ass. xvi, pp. 496-499, fig.
- NICOLAS, A. Recherches sur l'embryologie des Reptiles. I. Contribution à l'étude de la fécondation chez l'Orvet. Arch. anat. micr. iii, pp. 457-489, pl. xx.
- NIKOLSKI, A. M. Reptiles, Amphibians, and Fishes collected on the voyage of Mr N. A. Zaroudny to Persia in 1898 [Russian text]. Annuaire Mus. St Petersburg. iv, pp. 375-417, pl. xx.
- . *Contia satunini*, n. sp., and *Agama ruderata* Oliv., from Transcaucasia [Russian text]. T. c. pp. 449-451.
- . *Chiromantis kachowskii*, a new species of Amphibian from Abyssinia [Russian text]. Op. cit. v, p. 246.
- . Reptiles and Amphibians collected by P. P. Suschkin in Turgai, Turkestan [Russian text]. Bull. Soc. Moscou 1900, pp. 366-368.
- NOPCSÁ, F. v. Dinosaurierreste aus Siebenbürgen (Schädel von *Limnosaurus transsylvanicus*, n. g., n. sp.). Denk. Ak. Wien lxviii, pp. 555-591, 6 pls.
- NORMAN, W. W. Remarks on the San Marcos Salamander, *Typhlomolge rathbuni* Stejneger. Amer. Natural. xxxiv, pp. 179-183, figg.

- OLIVIER, E. Les Rayons X en biologie. Régénération des membres chez les Batraciens urodèles. *Rev. Sci. Bourbonnais* xiii, pp. 103-108, figg.
- ORRÙ, E. Sullo sviluppo del pancreas e del figato nel *Gongilus ocellatus*. *Boll. R. Acc. Medica di Roma* xxv, pp. 303-318, 2 pls. (1899).
- Sullo sviluppo degli isolotti del Langerhans nel *Gongilus ocellatus*. *Monit. Zool. ital.* xi, pp. 119-124, pl. vi.
- OSBORN, H. F. Intercentra and Hypapophyses in the Cervical Region of *Mosasaurs*, Lizards, and *Sphenodon*. *Amer. Natural.* xxxiv, pp. 1-7, figg.
- Reconsideration of the Evidence for a Common Dinosaur-Avian Stem in the Permian. *T. c.* pp. 777-799, figg.
- Origin of the Mammalia. III. Occipital condyles of Reptilian Tripartite Type. *T. c.* pp. 943-947, figg.
- OSBORN, H. L. A remarkable Axolotl from North Dakota. *Amer. Natural.* xxxiv, pp. 551-562, figg.
- PABST, W. Beiträge zur Kenntniss der Thierfährten in dem Rothliegenden Deutschlands. *Zeitschr. Deutsch. geol. Ges.* lii, pp. 48-63.
- PELLEGRIN, J. Durée de la vie et perte de poids chez les Ophidiens en inanition. *Bull. Soc. Philom.* (9) ii, pp. 112-116.
- PETER, K. Mittheilungen zur Entwicklungsgeschichte der Eidechse. I. Das Wachsthum des Riechgrübchens. Ein Beitrag zur Lehre vom embryonalen Wachsthum. *Arch. mikr. Anat.* lv, pp. 585-616, figg., pl. xxxiii.
- PHISALIX, C. Propriétés physiologiques du venin de *Celopeltis insignitus*. Affinités zoologiques des Opisthoglyphes. *Bull. Mus. Paris* 1900, pp. 33-39.
- Remarques sur la note précédente [P. ANCEL]. *C.R. Soc. Biol.* lii, pp. 962, 1060 & 1061.
- PHISALIX-PICOT (M<sup>me</sup>). Recherches embryologiques, histologiques et physiologiques sur les glandes à venin de la Salamandre terrestre. *Paris*, 8vo, 1900, 140 pp., 7 pls.
- Sur les clasmocytes de la peau de la Salamandre terrestre et de sa larve. *Bull. Mus. Paris* 1900, pp. 72-75, fig.
- Recherches embryologiques, histologiques et physiologiques sur les glandes à venin de la Salamandre terrestre. *T. c.* pp. 294-300.
- Sur les clasmocytes de la peau de la Salamandre terrestre et de sa larve. *C.R. Soc. Biol.* lii, pp. 178-180.
- Origine et développement des glandes à venin de la Salamandre terrestre. *T. c.* pp. 479-481.
- Travail sécrétoire du noyau dans les glandes granuleuses de la Salamandre terrestre. *T. c.* pp. 481-483.
- PICAGLIA, L. Aggiunte ai Vertebrati del Modenese. *Atti Soc. Modena* (4) i, pp. 119-123.
- POLICARD, A. Note sur les effets de l'ablation et de la greffe de l'organe de Bidder du Crapaud. *C.R. Soc. Biol.* lii, pp. 846 & 847.
- PRENANT, A. Sur les cavités céphaliques des Reptiles. *Bull. Soc. Nancy* (3) i, pp. 178-181.

- PUNNETT, R. C. Note on a Hermaphrodite Frog. Ann. Nat. Hist. (7) vi, pp. 179 & 180, pl. ix.
- RAFFAELE, F. Per la genesi dei nervi da catene cellulari. Anat. Anz. xviii, pp. 337-344, figg.
- RAMON Y CAJAL, P. Algunas experiencias sobre los cambios de color del camaleón. Act. Soc. Espan. 1900, pp. 242-251.
- REINACH, A. v. Schildkrötenreste im Mainzer Tertiärbecken und in benachbarten, ungefähr gleichalterigen Ablagerungen. Abh. Senckenb. Ges. xxviii, pp. 1-135, pls. i-xliv.
- REUTER, K. Ueber die Entwicklung der Darmspirale bei *Alytes obstetricans*. Anat. Hefte, Arb. xiii, pp. 339-361, pls. xviii-xx.
- . Ueber die Rückbildungserscheinungen am Darmkanal der Larve von *Alytes obstetricans*. Op. cit. xiv, pp. 433-446, figg., pls. xix & xx, and xv, pp. 625-672, pls. lii-lvi.
- RIDEWOOD, W. G. On the Hyobranchial Skeleton and Larynx of the new Aglossal Toad, *Hymenochirus boettgeri*. J. Linn. Soc. xxvii, pp. 454-462, pl. xxxi.
- . Note on the Carpus of the new Aglossal Toad, *Hymenochirus boettgeri*. T. c. pp. 460-462.
- ROGER, O. Wirbelthierreste aus dem Dinotheriensande. III. Ber. Ver. Augsburg xxiv, pp. 53-70.
- ROLLINAT, R. Observations sur quelques Reptiles du Département de l'Indre. Mœurs et reproduction du Lézard vert. Mem. Soc. zool. France xiii, pp. 5-30.
- SABATIER, A. Morphologie de la ceinture pelvienne chez les Amphibiens. C.R. Ac. Sci. cxxx, pp. 633-637.
- SAMPSON, LILIAN V. Unusual Modes of Breeding and Development among Anura. Amer. Natural. xxxiv, pp. 687-715.
- SAUVAGE, H. E. Catalogue des Reptiles trouvés dans le terrain Jurassique supérieur du Boulonnais. C.R. Ass. Franc. xxviii, ii, pp. 416-419.
- . Les Poissons et les Reptiles du Jurassique supérieur de Fumel (Lot-et-Garonne). Bull. Soc. geol. France xxviii, pp. 496-499.
- . Note sur les Poissons et les Reptiles du Jurassique inférieur du Département de l'Indre. T. c. pp. 500-504, pl. ix.
- SCHAUINSLAND, H. Weitere Beiträge zur Entwicklungsgeschichte der *Hatteria*. Skelettsystem, schallleitender Apparat, Hirnnerven, etc. Arch. mikr. Anat. lvi, pp. 747-867, pls. xxxii-xxxiv.
- SCHMIDT, P. Die Dahl'sche Natter (*Zamenis dahli* Fitz.) in der Gefangenschaft. Zool. Garten xli, pp. 217 & 218.
- SCHNEE, —. Ueber eine Sammlung südbrasilianischer Reptilien und Amphibien, nebst Beschreibung einer neuen Schildkröte (*Platemys werneri*). Zool. Anz. xxiii, pp. 461-464, figg.
- . Kleine Mitteilungen über das Freileben einiger Australischer Reptilien. Zool. Garten xli, pp. 17-19.
- . Kann eine Sumpfschildkröte überhaupt ausserhalb des Wassers fressen? T. c. pp. 215-217.
- . Mimikry bei Schlangen? T. c. pp. 219-222.



- [SCHNEE, —.] Mimikry bei südamerikanischen Schildkröten? T. c. pp. 315–317.
- , *Ancistrodon blomhoffi* Boie. T. c. pp. 395 & 396.
- , Zwei japanische Molche (*Molge pyrrhogastra* und *Megalobatrachus maximus*). Natur und Haus viii, pp. 245–247.
- SCHNEIDER, G. Der Sheltopusik. Zool. Garten xli, pp. 117–120.
- SCHULZ, P. Ueber die Anordnung der Musculatur im Magen der Batrachier. Arch. Physiol. 1900, pp. 1–8, figg.
- SEELEY, H. G. Further Evidence of the Skeleton of *Eurycarpus oweni*. Quart. J. Geol. Soc. lvi, pp. 325–332, pl. xxi.
- , On an Anomodont Reptile, *Aristodesmus rütimeyeri* (Wiedersheim) from the Bunter Sandstone near Basel. T. c. pp. 620–645, figg.
- , On the Skeleton of a Theriodont Reptile from the Baviaans River (Cape Colony), *Dicranozygoma leptocelus*, gen. et sp. nov. T. c. pp. 646–656, pl. xxxvi.
- SEURAT, L. G. Sur quelques espèces du genre *Elaps* de la Collection du Muséum. Bull. Mus. Paris 1900, pp. 229–233.
- SEWERTZOFF, A. N. Zur Entwicklungsgeschichte von *Ascalabotes fascicularis*. Vorläufige Mitteilung. Anat. Anz. xviii, pp. 33–40, figg.
- SHORE, T. W. Unusual arrangement of the Renal Portal Vein in the Frog (*Rana temporaria*). J. Anat. Physiol. norm. path. (3) xiv, pp. 398–402, fig.
- SIEBENROCK, F. Der Zungenbeinapparat und Kehlkopf sammt Luftröhre von *Testudo calcarata* Schneid. SB. Ak. Wien cix, 1, pp. 441–448, pl. —.
- SIXTA, V. Der Monotremen- und Reptilien-Schädel. Eine vergleichend-osteologische Untersuchung. Zeitschr. Morphol. ii, pp. 323–364, figg.
- , Vergleichend-osteologische Untersuchungen über den Bau des Schädels von Monotremen und Reptilien. Zool. Anz. xxiii, pp. 213–229, figg.
- SMIRNOW, A. E. Zur Kenntniss der Morphologie der sympathischen Ganglienzellen beim Frosche. Anat. Hefte, Arb. xiv, pp. 409–431, figg., pls. xvii & xviii.
- SMITH, F. Some additional Data on the Position of the Sacrum in *Necturus*. Amer. Natural. xxxiv, pp. 635–638, fig.
- SRDINKO, O. V. Bau und. Entwicklung der Nebenniere bei Anuren. Anat. Anz. xviii, pp. 500–508, figg.
- STADERINI, R. Intorno alle cavità premandibolari del *Gongylus ocellatus* e al loro rapporto con la tusca ipofisaria di Rathke. Atti Acc. Gioen. (4) xiii, no. xii, 10 pp., 1 pl.
- STEINDACHNER, F. Expedition S. M. Schiff "Pola" in das Rothe Meer, nördliche und südliche Hälfte, 1895/96 und 1897/98. Zoologische Ergebnisse. xvii. Bericht über die herpetologischen Aufsammlungen. Denk. Ak. Wien lxix, pp. 325–335, 2 pls.
- STEJNEGER, L. Description of two new Lizards of the genus *Anolis* from Cocos and Malpelo Islands. Bull. Mus. Harvard xxxvi, pp. 161–164, 1 pl.
- STUDNÍČKA, F. K. Zur Kenntniss der Parietalorgane und der sog. Paraphyse der niederen Wirbelthiere. Verh. Anat. Ges. 1900, pp. 44–52, figg.

- SUCHARD, E. Des vaisseaux sanguins et lymphatiques du poulmon du Triton crété. Arch. anat. micr. iii, pp. 140-145, pl. viii.
- TATON-BAULMONT, E. Note sur *Calopeltis lacertina* Wagl. Feuille Natural. xxx, pp. 85-87.
- TERRY, F. W. *Rana temporaria* in the Scilly Islands. Zoologist (4) iv, p. 383.
- TONKOFF, W. Experimentelle Erzeugung von Doppelbildungen bei Triton. SB. Ak. Berlin 1900, pp. 794-797, fig.
- TORNIER, G. Neue Liste der Crocodile, Schildkröten und Eidechsen Deutsch Ost-Afrika. Zool. Jahrb. Syst. xiii, pp. 579-618, figg.
- . Ueber *Atractaspis hildebrandti* Ptrs. Op. cit. xiv, pp. 85 & 86.
- . Beschreibung eines neuen Chamæleons. Zool. Anz. xxiii, pp. 21-23, figg.
- . Ueber Amphibiengabelschwänze und einige Grundgesetze der Regeneration. T. c. pp. 233-256, figg.
- VAILLANT, L. La Tortue de Perrault (*Testudo indica* Schneider). Arch. Mus. Paris (4) ii, pp. 25-48, figg., pl. viii.
- . Documents relatifs à la Tortue gigantesque de la Réunion. Bull. Mus. Paris 1899, pp. 354-356.
- . Carapaces du *Testudo microphyes* Günther, appartenant au Musée du Havre. Op. cit. 1900, pp. 228 & 229.
- VALENTI, G. Sopra le prime fasi di sviluppo della muscolatura degli arti nel *Gongilus ocellatus*. Rend. Acc. Bologna (2) iii, 1899, pp. 113-116.
- . Sopra i rapporti di sviluppo fra la capsula del pronefrio, la muscolatura ventrale e la muscolatura degli arti negli Anfibi (Axolotl). Verh. Anat. Ges. 1900, pp. 189-194, figg.
- VAN DEN BROECK, E. Les Dépôts à Iguanodons de Bernissart et leur transfert dans l'Étage Purbeckien ou Aquilonien du Jurassique Supérieur. Exposé comprenant une revue de la faune des Vertébrés du Purbeckien et du Wealdien dans le Sud-Est de l'Angleterre. Mem. Soc. Belge Geol. 1900, pp. 39-112.
- VAN DENBURGH, J. & WIGHT, O. B. On the Physiological Action of the Poisonous Secretion of the Gila Monster (*Heloderma suspectum*). Amer. J. Physiol. iv, pp. 209-238.
- VIRÉ, A. Sur trente exemplaires de Protées récemment rapportés au Muséum. Bull. Mus. Paris 1900, pp. 174 & 175.
- WALL, F. Parturition of an *Echis carinata*. J. Bombay Soc. xiii, p. 184.
- . Notes on the Breeding of *Tropidonotus piscator*. T. c. pp. 373 & 374.
- & EVANS, G. H. Occurrence of *Dipsas cyanea* in Burma. T. c. p. 188.
- & —. Incubation of a Brood of *Zamenis mucosus*. T. c. pp. 188 & 189.
- & —. Occurrence of *Python molurus* in Burma. T. c. pp. 190 & 191.
- & —. Notes on Ophidia collected in Burma from May to December, 1899. T. c. pp. 343-354, fig.

- [WALL, F. & EVANS, G. H.] Notes on two Specimens of *Lycodon fasciatus*. T. c. pp. 372 & 373.
- WANDOLLECK, B. Zur Kenntniss der Gattung *Draco* L. Abh. Mus. Dresden ix, no. 3, 16 pp., 1 pl.
- WARD, J. Notes on Labyrinthodonts from the North Staffordshire Coal-field. Rep. North Staffordsh. Club xxxiv, pp. 101-107.
- On the Occurrence of Labyrinthodont Remains in the Keuper Sandstone of Stanton. T. c. pp. 108-112, pls. iv & v.
- WARREN, E. A further Note on a Variation in *Rana temporaria*. Anat. Anz. xviii, pp. 122 & 123, fig.
- WEBER, M. Ueber auffallende Ecaudaten-Larven von Tjibodas (Java). Ann. Jard. Bot. Buitenzorg, Suppl. ii, 1898, pp. 5-10, figg.
- WERNER, F. Die Reptilien- und Batrachierfauna des Bismarck-Archipels. Mt. Mus. Berlin i, 4, 132 pp., figg.
- Reptilien und Batrachier aus Sumatra. Zool. Jahrb. Syst. xiii, pp. 479-506, pls. xxxi-xxxiv.
- Ueber Reptilien und Batrachier aus Columbien und Trinidad. II. Verh. Ges. Wien I. pp. 262-272.
- Beschreibung einiger noch unbekannter neotropischer und indischer Reptilien. Zool. Anz. xxiii, pp. 196-198.
- Riesenschlangen in Gefangenschaft. Zool. Garten xli, pp. 233-243, 274-287.
- WEST, G. S. On the Sensory Pit of the Crotalinae. Quart. J. Micr. Sci. xliii, pp. 49-59, pl. iv.
- WETZEL, G. Drei abnorm gebildete Eier von *Tropidonotus natrix*. Anat. Anz. xviii, pp. 425-440, figg.
- WHITFIELD, R. P. Note on the principal Type Specimen of *Mosasaaurus maximus* Cope. Bull. Amer. Mus. xiii, pp. 25-29, figg.
- WIEDERSHEIM, R. Brutpflege bei niederen Wirbelthieren. Biol. Centrbl. xx, pp. 304-316, 321-342, figg.
- WIELAND, G. R. The Skull, Pelvis, and Probable Relationships of the Huge Turtles of the Genus *Archelon* from the Fort Pierre Cretaceous of South Dakota. Amer. J. Sci. (4) ix, pp. 237-251, figg., pl. ii.
- Some Observations on Certain Well-marked Stages in the Evolution of the Testudinate Humerus. T. c. pp. 413-423, figg.
- WILLISTON, S. W. Notes on the Coraco-Scapula of *Eryops* Cope. Kansas Quart. viii, pp. 185 & 186, pls. xxvii & xxix.
- WILSON, G. The Development of the Müllerian Ducts of Reptiles. Tr. R. Soc. Edinb. xxxix, pp. 613-621, 2 pls.
- WILSON, H. V. Formation of the Blastopore in the Frog Egg. Anat. Anz. xviii, pp. 209-239, figg. Postscript, p. 384.
- WOLTERSTORFF, W. Ueber *Discoglossus pictus* und *Glossosiphona algira* auf Corsica. Zool. Anz. xxiii. pp. 23-27.
- Ueber die Verbreitung des Springfrosches (*Rana agilis*) in Deutschland. Naturw. Wochenschr. xv, pp. 205-207.
- Révision des espèces de Tritons du genre *Euproctus* Gené, suivi d'un aperçu des Urodèles de la Région Paléarctique. Feuille Natural. xxi, pp. 33-38, 73-81, pl. v.

WOODWORTH, J. B. Vertebrate Footprints on Carboniferous Shales of Plainville, Massachusetts. Bull. Geol. Soc. Amer. xi, pp. 449-454, pl. xl.

ZSCHOKKE, F. Die Tierwelt der Hochgebirgsseen. Denk. Schweiz. Ges. xxxvii, 400 pp., 8 pls.

## II. FAUNÆ.

### EUROPE.

*England.* On the Reptiles and Batrachians of Hampshire and the Isle of Wight: J. E. KENSALL, P. Hampsh. Club iii, 1897, pp. 267-273: BOULENGER, Victoria History, Hampshire, i, pp. 204-207. J. W. FAWCETT, Naturalist 1900, p. 36, gives a list of the Reptiles and Batrachians of the County of Durham.

*France.* A. ACLOQUE's Faune de France, small edition, pp. 477-496, contains keys for the identification of the Reptiles and Batrachians.

*Switzerland.* F. ZSCHOKKE, Denk. Schweiz. Ges. xxxvii, pp. 270-281, remarks on the distribution and breeding habits of Batrachians at great altitudes in the Alps.

*Dalmatia.* Additions to the herpetological fauna by KOLOMBATOVIĆ, Druge Zool. Vij. Dalm. pp. 20-27.

### ASIA.

*Turkestan.* List of some Reptiles and Batrachians: NIKOLSKI, Bull. Soc. Moscou 1900, pp. 366-368.

*Persia.* On a collection of Reptiles and Batrachians: NIKOLSKI, Ann. Mus. St Petersburg. 1899, pp. 375-407, pl. xx.

*Hainan.* On some Reptiles and Batrachians from the interior: BOULENGER, P. Z. S. 1899, pp. 956-959, pls. lvi & lvii.

*Malay Peninsula and Siam.* Notes on the Batrachians and list of the species hitherto recorded from those countries: S. S. FLOWER, P. Z. S. 1899, pp. 885-916, pls. lix & lx.

*Borneo.* On new Reptiles and Batrachians: BOULENGER, P. Z. S. 1900, pp. 182-187, pls. xiv-xvii. On a collection of Reptiles and Batrachians from Mount Kina Balu: HANITSCH, J. Straits Asiat. Soc. xxxiv, pp. 69-75.

*Sumatra.* On a collection of Reptiles and Batrachians, and full list of the species on record: F. WERNER, Zool. Jahrb. Syst. xiii, pp. 479-508, pls. xxxi-xxxv.

*Christmas Id., Indian Ocean.* On the Reptiles: BOULENGER, Mon. Christm. Id., pp. 51-54, pl. vii.

### AFRICA.

*Borders of the Red Sea.* On a collection of Reptiles and Batrachians: STEINDACHNER, Denk. Ak. Wien lxix, pp. 325-335, 2 pls.

*Egypt.* On a few Reptiles from the Emerald mines on the coast of the Red Sea: ANDERSON, Ann. Nat. Hist. (7) vi, pp. 419-425.

*German East Africa.* Revised List of the Crocodiles, Chelonians, and Lizards: TORNIER, Zool. Jahrb. Syst. xiii, pp. 579-618, figg.

*Gaboon District.* List of the Batrachians and Reptiles, with descriptions of new genera and species: BOULENGER, P. Z. S. 1900, pp. 433-456, figg., pls. xxvii-xxxii.

*Angola.* On some Reptiles and Batrachians: J. BETHENCOURT FERREIRA, J. Sci. Lisb. (2) vi, pp. 49-53.

*Madagascar.* On new or little known Reptiles and Batrachians: MOCQUARD, Bull. Soc. Philom. (9) ii, pp. 93-111, pl. ii.

#### AMERICA.

*North America.* The *Squamata* and *Emydosauria* of North America monographed by the late E. D. COPE, Rep. U. S. Mus. f. 1898, pp. 153-1270, figg., 36 pls. (1900).

*Canada.* On the Batrachians of the Peninsula of Gaspé, and their distribution in the Maritime provinces: P. COX, Tr. R. Soc. Canada (2) v, pp. 152-154.

*Arkansas.* On a collection of Reptiles: R. B. McLAIN, Notes Coll. Rept. Arkansas (Wheeling, W. Va., 1899, 8vo, 5 pp.).

*California.* On a collection of Reptiles: R. B. McLAIN, Critic. Notes Coll. W. Coast U. S. (Wheeling, W. Va., 1899, 8vo, 13 pp.).

*Mexico and Central America.* A. GÜNTHER commences his account of the Tailless Batrachians in the Biologia Centrali-Americana, pp. 197-236, pls. lx-lxvi. On the Reptiles in the collection of the Stanford University: R. B. McLAIN, Contrib. Neotrop. Herpetol. (Wheeling, W. Va., 1899, 8vo, 5 pp., 1 pl.).

*Trinidad.* On some Reptiles and Batrachians: F. WERNER, Verh. Ges. Wien I, pp. 262-271.

*Colombia.* On some Reptiles and Batrachians: F. WERNER, t. c. pp. 262-272.

*Mount Roraima, Brit. Guiana.* On the Reptiles and Batrachians: BOULENGER, Tr. Linn. Soc. London (2) viii, pp. 53-56, pl. v.

*Brazil.* On a collection of Snakes from Lagoa Santa: A. S. JENSEN, Vid. Medd. 1900, pp. 99-111, figg. On a few Reptiles and Batrachians from the vicinity of São Paulo: SCHNEE, Zool. Anz. xxiii, pp. 461-464, figg.

#### PAPUASIA.

*New Guinea.* On a collection of Reptiles and Batrachians from German New Guinea: E. LÖNNBERG, Ann. Nat. Hist. (7) vi, pp. 574-582.

*Bismarck Archipelago.* An account of the Reptiles and Batrachians by F. WERNER, Mt. Mus. Berlin i, 4, 132 pp., figg.

#### FOSSIL FAUNÆ.

*Wealden and Purbeck of England, France, and Belgium.* E. VAN DEN BROECK, Mem. Soc. Belge Geol. 1900, pp. 39-112 comments on the affinities of the various Reptiles from these beds and gives lists of the species with an indication of their distribution.

*Jurassic of France.* On Reptilian remains from Lot-et-Garonne and Indre: SAUVAGE, Bull. Soc. geol. France xxviii, pp. 496-504, pl. ix. The same author, C.R. Ass. Franc. xxviii, 11, pp. 416-419, gives a list of Reptiles hitherto found in the Upper Jurassic of the Boulonnais.

*Mayence basin (Miocene).* On the Chelonian remains: A. v. REINACH, Abh. Senckenb. Ges. xxviii, pp. 1-135, pls. i-xliv.

*Trias of Germany and Bohemia.* W. PABST, Zeitschr. Deutsch. geol. Ges. lii, pp. 48-63, gives a list of the "Ichnites" of the Rothliegende, with an attempt at classifying these impressions.

## III. REFERENCES ARRANGED SYSTEMATICALLY.

## REPTILIA AND BATRACHIA.

- F. K. STUDNÍČKA, Verh. Anat. Ges. 1900, pp. 44-52, figg., has remarks on the parietal organs of the brain of Reptiles and Batrachians.
- J. T. CUNNINGHAM, Sexual Dimorphism, pp. 165-177, figg., makes some remarks on the secondary sexual characters of Reptiles and Batrachians.
- L. G. ANDERSSON, Bih. Svenska Ak. xxvi, iv, no. 1, catalogues the Linnean type specimens of Lizards, Chelonians, and Batrachians in the Stockholm Museum.

## REPTILIA.

- M. FÜRBRINGER, Jena. Zeitschr. xxxiv, pp. 215-718, figg., pls. xiii-xvii, brings out a memoir on the pectoral arch of Reptiles, followed by a new scheme of classification. The class is divided into 10 principal groups of which the Squamata are regarded as the nearest to the hypothetical ancestral group which connected them with some form of early Selachians:—I. STREPTOSTYLICA (LACERTILIA and OPHIDIA). II. RHYNCHOCEPHALIA, ACROSAURIA, MICROSAURIA. III. ICHTHYOPTERYGIA. IV. CHELONIA. V. SAUROPTERYGIA. VI. MESOSAURIA. VII. THEROMORPHA. VIII. CROCODYLIA. IX. DINOSAURIA. X. PATAGIOSAURIA (PTEROSAURIA).
- H. F. OSBORN, Amer. Natural. xxxiv, pp. 1-7, figg., remarks on the intercentra and hypapophyses in the cervical region of Mosasaurs, Lizards, and *Sphenodon*, and, t. c. p. 944, notices and figures various types of Reptilian tripartite occipital condyle.
- A. BANCHI, Monit. Zool. ital. xi, pp. 231-243, figg., remarks on an additional bone, named by him parafibula, in the hind limb of various Reptiles.
- G. WILSON, Tr. R. Soc. Edinb. xxxix, pp. 613-621, 2 pls., has a paper on the development of the Müllerian ducts of Reptiles (*Crocodilus*, *Chelone*, *Lacerta*).
- SCHNEE, Zool. Garten xli, pp. 219-222, 315-317, remarks on supposed cases of mimicry among Snakes and South American Chelonians.

## SQUAMATA.

- MARIE LOYEZ, C.R. Ac. Sci. cxxx, pp. 48-50, investigates the constitution of the ovarian follicle in Lizards and Snakes.

## LACERTILIA.

- V. SIXTA, Zeitschr. Morphol. ii, pp. 323-364, figg., compares the skulls of Lizards (*Varanus*, *Lacerta*) with those of Monotremes. Also Zool. Anz. xxiii, pp. 213-229, figg.
- E. GAUFF, Anat. Hefte, Arb. xv, pp. 435-595, figg., pls. xlii-xlvii, gives an account of the chondrocranium of *Lacerta agilis*.

- E. FISCHER, Arch. mikr. Anat. lv, pp. 441-478, pls. xxii-xxiv, studies the structure of the nasal cavity and the lachrymal duct in *Amphisbænida*.  
 K. PETER, t. c. pp. 582-616, pl. xxxiii, describes the development of the olfactory pit in *Lacerta*.  
 A. HAASE, Arch. Naturg. lxvi, pp. 321-345, pls. xiii & xiv, investigates the structure and development of the digital expansions of the *Geckonida*.  
 A. N. SEWERTZOFF, Anat. Anz. xviii, pp. 33-40, figg., has a preliminary communication on the development of the skull of *Tarentola mauritanica*.  
 K. STADERINI, Atti Acc. Gioen. (4) xiii, no. xii, investigates the development of the head of *Chalcides ocellatus*.  
 A. PRENANT, Bull. Soc. Nancy (3) i, pp. 178-181, remarks on the cephalic cavities in the embryos of various Lacertilia.  
 G. VALENTI, Rend. Acc. Bologna (2) iii, 1899, pp. 113-116, has a preliminary communication on the first stages in the development of the musculature of the limbs in *Chalcides ocellatus*.  
 E. ORRÒ, Boll. R. Acc. Med. Roma xxv, pp. 303-318, 2 pls. (1899), and Monit. Zool. ital. xi, pp. 119-124, pl. vi, deals with the development of the pancreas and liver in *Chalcides ocellatus*.  
 A. NICOLAS, Arch. anat. micr. iii, pp. 457-489, pl. xx, investigates the fecundation of the ovum in *Anguis fragilis*.  
 On the earliest use of the name *Sauria*: T. GILL, Science (2) xii, p. 730.

## GECKONIDÆ.

- Teratoscincus microlepis*, Nik., and *bedriagai*, Nik., described by NIKOLSKI, Ann. Mus. St. Petersb. 1899, pp. 376 & 378.  
*Stenodactylus lumsdenii*, Blgr. Note by NIKOLSKI, t. c. p. 388.  
*Tropicolotes nattereri*, sp. n., STEINDACHNER, Denk. Ak. Wien lxix, p. 326, pl. i, fig. 2, Gulf of Akaba.  
*Bunopus tuberculatus*, Blanf. Note by NIKOLSKI, t. c. p. 387.  
*Gymnodactylus sagittifer*, p. 379, *kirmanensis*, p. 381, *agamuroides*, p. 384, pl. xx, fig. 1, and *zarudnyi*, p. 385, pl. xx, fig. 2, spp. nn., NIKOLSKI, t. c., Persia; *G. louisianensis*, De Vis, redescribed by LÖNNBERG, Ann. Nat. Hist. (7) vi, p. 575.  
*Gonatodes africanus*, Werner. Note by TORNIER, Zool. Jahrb. Syst. xiii, p. 584.  
*Pristurus rupestris*, Blanf. Note by STEINDACHNER, Denk. Ak. Wien lxix, p. 327.  
*Phyllodactylus stumpffii*, Bttgr., and *pictus*, Ptrs. Notes by MOCQUARD, Bull. Soc. Philom. (9) ii, pp. 101 & 103; *P. brevipes* and *bastardi*, spp. nn., id. ibid. pp. 99 & 101, pl. ii, figg. 5 & 6, Madagascar.  
*Diplodactylus wolterstorffi*, sp. n., TORNIER, Zool. Jahrb. Syst. xiii, p. 584, fig., Tanga, German E. Africa.  
*Gehyra butleri*, sp. n., BOULENGER, J. Bombay Soc. xiii, p. 333, pl. —, fig. 1, Selangor; *G. larutensis*, sp. n., id. Ann. Nat. Hist. (7) vi, p. 188, Perak.  
*Lygodactylus verticillatus*, Mocq. Note by MOCQUARD, Bull. Soc. Philom. (9) ii, p. 104.  
*Lepidodactylus harterti*, sp. n., WERNER, Zool. Anz. xxi, p. 196, Malacca.  
*Gecko rhacophorus*, Blgr., figured by HANITSCH, J. Straits Asiat. Soc. xxxiv, pl. i, fig. 1; *G. listeri*, Blgr., figured by BOULENGER, Mon. Christmas Id., pl. vii, fig. 1.  
*Sphaerodactylus buergeri*, sp. n., WERNER, Verh. Ges. Wien l, p. 264, Trinidad.

## UROPLATIDÆ.

The name GECKO-CHAMÆLEONTES is proposed for this group of Lizards which is regarded as of Subordinal rank: FÜRBRINGER, Jena. Zeitschr. xxxiv, p. 610.

*Uroplates fimbriatus*, Schn. Note on its arboreal habits: MOCQUARD, Bull. Soc. Philom. (9) ii, p. 104.

## AGAMIDÆ.

*Draco*, L. Remarks on the specimens preserved in the Dresden Museum: WANDOLLECK, Abh. Mus. Dresden ix, no. 3; *D. rizali*, sp. n., id. ibid. p. 15, pl. —, figg. 6 & 17, Mindanao; *D. whiteheadi*, sp. n., BOULENGER, P. Z. S. 1899, p. 956, pl. lxvi, fig. 1, Hainan; *D. punctatus* and *formosus*, spp. nn., BOULENGER, Ann. Nat. Hist. (7) vi, pp. 189 & 190, Perak.

*Gonyocephalus beyschlagi*, Bttgr. Note by WERNER, Zool. Jahrb. Syst. xiii, p. 484.

*Dendragama boulengeri*, Doria, redescribed and figured by WERNER, t. c. p. 484, pl. xxxi, fig. 2.

*Aphaniotis floweri*, sp. n., WERNER, t. c. p. 486, Singapore (?).

*Acanthosaura hainanensis*, sp. n., BOULENGER, P. Z. S. 1899, p. 957, pl. lxvi, fig. 2, Hainan.

*Agama rudrata*, Oliv., recorded from Transcaucasia by NIKOLSKI, Ann. Mus. St. Petersb. 1899, p. 451; *A. kirmanensis*, sp. n., NIKOLSKI, Ann. Mus. St. Petersb. 1899, p. 389, Kirman, Persia.

*Phrynocephalus spiniventris*, Nik., referred as a variety to *P. maculatus*, And., by NIKOLSKI, t. c. p. 392.

*Uromastix ornatus*, Heyden. Described and figured by STEINDACHNER, Denk. Ak. Wien lxix, p. 328, pl. i, fig. 1.

## IGUANIDÆ.

*Anolis agassizi*, p. 161, pl. —, Malpelo Id., Pacific Ocean, off Colombia, and *townsendi*, p. 163, Cocos Id., Pacific Ocean, off Costa Rica, spp. nn., STEJNEGER, Bull. Mus. Harvard xxxvi.

*Basiliscus guttulatus*, Cope. Note by McLAIN, Contrib. Neotrop. Herpetol. p. 1 (1899).

*Hoplurus grandidieri*, sp. n., MOCQUARD, Bull. Soc. Philom. (9) ii, p. 105, Madagascar.

*Stenocercus melanopygus* and *chrysopygus*, spp. nn., BOULENGER, Ann. Nat. Hist. (7) vi, pp. 182 & 183, Andes of Peru.

*Tropidurus thomasi*, sp. n., BOULENGER, t. c. p. 184, Coast of Peru.

*Sceloporus graciosus*, B. & G., and *occidentalis*, B. & G. Notes by McLAIN, Critic. Notes Coll. W. Coast U.S., p. 3 (1899).

## ANGUIDÆ.

*Ophisaurus apus*, Pall. Notes on the habits by G. SCHNEIDER, Zool. Garten xli, p. 117; *O. ventralis compressus*, subsp. n., COPE, Rep. U. S. Mus. f. 1898, p. 501, fig., South Carolina.

*Diploglossus bakeri*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 193, Jamaica.



## HELODERMATIDÆ.

- J. VAN DENBURGH & O. B. WIGHT, Amer. J. Physiol. iv, pp. 209-238, have investigated the physiological action of the poison of *Heloderma suspectum*, Cope, the effects of which they find differ in no important respect from those of various Snake venoms.

## VARANIDÆ.

- Varanus hofmanni*, Roger (foss.). Vertebra figured by ROGER, Ber. Ver. Augsburg xxxiv, pl. iii, figg. 12-14.

## TEIIDÆ.

- Cnemidophorus stejnegeri*, Van Denb. = *C. undulatus*, Hallow.: McLAIN, Critic. Notes Coll. W. Coast U.S. p. 9 (1899); *C. tessellatus aethiops*, subsp. n., COPE, Rep. U. S. Mus. f. 1898, p. 582, Sonora.  
*Neusticurus rudis*, sp. n., BOULENGER, Tr. Linn. Soc. London (2) viii, p. 53, pl. v, fig. 1, Mt. Roraima, Brit. Guiana.  
*Prionodactylus leucostictus*, sp. n., BOULENGER, t. c. p. 54, pl. v, fig. 2, Mt. Roraima, Brit. Guiana.  
*Anaulis bogotensis*, Pters. Note by WERNER, Verh. Ges. Wien I, p. 267.  
*Oreocentrus striatus*, Pters. Note by WERNER, l. c.  
*Proctoporus ventrimaculatus*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 185, Andes of Peru.  
*Tretioacincus bifasciatus*, A. Dum., redescribed by WERNER, t. c. p. 268.

## LACERTIDÆ.

- Poromera fordi*, Hallow. Noticed and figured by BOULENGER, P. Z. S. 1900, p. 448, pl. xxxi, fig. 1.  
*Lacerta agilis*, Linn., and *viridis*, Laur. On Dalmatian specimens: KOLOMBATOVIC, Druge Zool. Vij. Dalm. pp. 20 & 21; *L. viridis*, Laur. On its habits and reproduction: R. ROLLINAT, Mem. Soc. Zool. France xiii, p. 5; *L. ocellata*, Daud. On its distribution in France: P. MARTY, Feuille Natural. xxxi, p. 27.  
*Nyctus bouleengeri*, sp. n., O. NEUMANN, Ann. Nat. Hist. 7 v, p. 56, Usoga, Brit. E. Africa.  
*Gastropholis lutzii*, sp. n., TORNIER, Zool. Jahrb. Syst. xiii, p. 391, fig., Tanga, German E. Africa.  
*Lalantia longicaudata*, Reuss, and *neumannii*, Matschie. Notes by STEINDACHNER, Denk. Ak. Wien lxix, pp. 329 & 330.  
*Eremias nigrocellatus*, Nik., referred as a variety to *E. intermedia*, Strauch: NIKOLSKI, Ann. Mus. St. Petersb. 1898, p. 399.  
*Streplosia persica*, sp. n., NIKOLSKI, t. c. p. 395, pl. xx, fig. 3, Persia.

## GERRHONSAURIDÆ.

- Gerrhonurus nigrolineatus*, Hallow. = *G. fasciularis*, Wgm.: TORNIER, Zool. Jahrb. Syst. xiii, p. 393.  
*Zonocaurus burtonii*, Girard. Note by MACQUARD, Bull. Soc. Philom. (9) ii, p. 107; *Z. longicaudatus*, sp. n., id. ibid. p. 108, Madagascar.

## SCINCIDÆ.

- Trachysaurus rugosus*, Gray. Notes on the habits: SCHNEE, Zool. Garten xli, p. 17.
- Mabuia quinquecarinata*, Werner. Note by WERNER, Zool. Jahrb. Syst. xiii, p. 487; *M. isseli*, Ptrs. = *M. varia*, Ptrs.: TORNIER, Zool. Jahrb. Syst. xiii, p. 596, fig.; *M. batesi*, sp. n., BOULENGER, P. Z. S. 1900, p. 449, pl. xxxi, fig. 2, Gaboon.
- Lygosoma nativitatis*, Blgr., figured by BOULENGER, Mon. Christmas Id. pl. vii, fig. 2; *L. kilimensis*, Stejneger. Note by TORNIER, Zool. Jahrb. Syst. xiii, p. 601; *Sepacontias modestus*, Gthr. = *L. sundevalli*, Smith: TORNIER, t. c. p. 599, fig.; *L. bampfyltdii*, E. Bartlett. Note by BOULENGER, Ann. Nat. Hist. (7) vi, p. 192. The same species, apparently, described and figured as *L. (Riopa) schneideri*, sp. n., WERNER, Zool. Jahrb. Syst. xiii, p. 487, pl. xxxi, fig. 1, Sumatra; *L. shelfordi*, sp. n., BOULENGER, P. Z. S. 1900, p. 182, pl. xiv, fig. 1, Sarawak; *L. larutense*, sp. n., BOULENGER, Ann. Nat. Hist. (7) v p. 306, Perak; *L. præsigne* and *stellatum*, spp. nn., id. op. cit. vi, pp. 191 & 192, Perak; *L. clathrotis*, sp. n., id. t. c. p. 194, Brit. E. Africa; *L. surdum*, p. 333, pl. —, fig. 2, Selangor, and *scotophilum*, p. 335, Batu caves, Selangor, spp. nn., BOULENGER, J. Bombay Soc. xiii.
- Ablepharus egeriae*, Blgr., figured by BOULENGER, Mon. Christmas Id. pl. vii, fig. 3.
- Eumeces skiltonianus*, B. & G. Note by McLAIN, Critic. Notes Coll. W. Coast U.S. p. 10 (1899); *E. zarudnyi*, sp. n., NIKOLSKI, Ann. Mus. St. Petersh. 1899, p. 399, pl. xx, fig. 4, Persia.
- Chalcides ocellatus*, Forsk. Note by STEINDACHNER, Denk. Ak. Wien lxix, p. 330; *C. ocellatus*, var. n. *occidentalis*, id. ibid. p. 331, Canary Ids.
- Melanocephalus ater*, Gthr., var. n. *longicauda*, TORNIER, Zool. Jahrb. Syst. xiii, p. 602, German E. Africa.

## OPHIOPSISEPIDÆ.

This family is established by JENSEN, Vid. Medd. 1900, p. 325, for *Ophiopsis nasutus*, Bocage, which is described and figured, p. 317, pl. iii.

## RHIPTOGLOSSA.

- P. RAMON Y CAJAL, Act. Soc. Espan. 1900, pp. 242-251, has made experiments on the changes of colour in Chameleons.
- On the colour-changes in the Chameleon: F. W. GAMBLE, Tr. Manchester Micr. Soc. 1899, pp. 93-96.
- Chameleon vulgaris*, Daud., var. n. *musæ*, STEINDACHNER, Denk. Ak. Wien lxix, p. 331, Ain Musa, Suez; *C. calcarifer*, Ptrs., noticed and figured, id. ibid. p. 332, pl. ii; *C. verrucosus*, Cuv., *melanocephalus*, Gray, and *lateralis*, Gray. Notes by MOCQUARD, Bull. Soc. Philom. (9) ii, pp. 95 & 96; *C. levigatus*, Gray, redescribed and figured by TORNIER, Zool. Jahrb. Syst. xiii, p. 603, fig.; *C. parvulus*, Blgr. = *C. roperi*, Blgr. = *C. dilepis*, Leach, id. ibid. p. 606; *C. fischeri*, Reichen. Notes by TORNIER, t. c. p. 611; *C. tempeli*, Tornier, var. n. *wolffi*, id. t. c. p. 613, fig., German East Africa; *C. filleborni*, sp. n., id. t. c. p. 614, fig., German E. Africa; *C. pfefferi*, sp. n., TORNIER, Zool. Anz. xxiii, p. 21, figg., Cameroon; *C. grandidieri* and *fallax*, spp. nn., MOCQUARD, t. c. p. 96, pl. ii, figg. 1 & 2, Madagascar.
- Brookia dentata*, sp. n., MOCQUARD, t. c. p. 98, pl. ii, fig. 4, Madagascar.

## PYTHONOMORPHA.

*Mosasaurus maximus*, Cope. Type specimen described and figured by WHITFIELD, Bull. Amer. Mus. xiii, p. 25, figg.

## OPHIDIA.

- L. KATHARINER, Zool. Jahrb. Syst. xiii, pp. 415-442, figg., pls. xxvii & xxviii, deals with the modifications of the nasal organ in Snakes adapted to aquatic life.
- G. S. WEST, Quart. J. Micr. Sci. xliii, pp. 49-59, pl. iv, investigates the structure of the loreal sensory pit of the *Crotalinae*.
- H. MARTIN, C.R. Ass. Franc. xxviii, 11, pp. 522-526, pl. v, has a paper on the development of the poison-apparatus of *Vipera aspis*.
- E. LAGUESSE, C.R. Soc. Biol. lii, pp. 800 & 801, has remarks on the pancreas of Snakes.
- E. GLAS, SB. Ak. Wien cix, iii, pp. 265-297, 3 pls., investigates the development of the spleen in *Tropidonotus natrix*.
- G. WETZEL, Anat. Anz. xviii, pp. 425-440, figg., reports on abnormal (duplex) eggs of *Tropidonotus natrix*.
- L. KATHARINER, Biol. Centrbl. xx, pp. 45-53, figg., writes on the mechanism of the bite of Viperine Snakes.
- J. PELLEGRIN, Bull. Soc. Philom. (9) ii, pp. 112-116, records his observations on the length of the life and the loss of weight in starving Snakes.
- F. WALL & G. H. EVANS have notes on Burmese Snakes. J. Bombay Soc. xiii, pp. 343-354.

## TYPHLOPIDÆ.

*Typhlops nigroalbus*, D. & B. = *T. muelleri*, Schleg., WERNER, Zool. Jahrb. Syst. xiii, p. 488; *T. mutilatus*, sp. n., WERNER, Zool. Anz. xxiii, p. 196, fig., Malacca; *T. willeyi*, sp. n., BOULENGER, Willey's Zool. Results v, p. 603, fig., Lifu, Loyalty Ids.

## BOIDÆ.

- F. WERNER, Zool. Garten xli, pp. 233-243, 274-287, writes on the habits and treatment of Boid Snakes in captivity.
- Python molurus*, L. Recorded from Pegu, Burma, by WALL & EVANS, J. Bombay Soc. xiii, p. 190.
- Chondropython viridis*, Schleg. Note by LÖNNBERG, Ann. Nat. Hist. (7) vi, p. 377.

## COLUBRIDÆ.

*Aglypha*.

- Stoliczkaia borneensis*, Blgr., figured by HANITSCH, J. Straits Asiat. Soc. xxxiv, pl. i, fig. 2.
- Tropidonotus*, Kuhl. Remarks on the Californian species referred to *Thamnophis*, Fitz., McLAIN, Critic. Notes Coll. W. Coast U. S. p. 11 (1899); *T. tessellatus*, Laur., var. *flavescens*, Werner. Notes by LEHR, Natur u. Haus viii, pp. 217 & 244, fig.; *T. piscator*, Schn. On the eggs: F. WALL, J. Bombay Soc. xiii, p. 373.
- Thamnophis stejnegeri*, sp. n., McLAIN, Contrib. Neotrop. Herpetol. p. 4, pl. — (1899), Salamanca, Guanajuato, Mexico.

- Lycodon fasciatus*, And. Note by WALL & EVANS, J. Bombay Soc. xiii, p. 372; *L. butleri*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 193, and J. Bombay Soc. xiii, p. 336, Perak.
- Lepturophis*, g. n., allied to *Lycodon*, for *L. borneensis*, sp. n., BOULENGER, P. Z. S. 1900, p. 183, pl. xv, Sarawak.
- Zamenis mucosus*, L. On the hatching of the eggs: WALL & EVANS, t. c. p. 189; *Z. dahlui*, Fitz. On its habits in captivity: P. SCHMIDT, Zool. Garten xli, p. 217; *Z. rogersi*, And., and *rhodorchachis*, Jan. Notes by STEINDACHNER, Denk. Ak. Wien lxix, p. 333.
- Xenelaphis ellipsifer*, sp. n., BOULENGER, P. Z. S. 1900, p. 184, pl. xvi, Sarawak.
- Philothamnus angolensis*, Bocage, is regarded as a variety of *P. irregularis*, Leach, by BETHENCOURT-FERREIRA, J. Sci. Lisb. (2) vi, p. 51.
- Coluber quatuorlineatus*, Lacép. On Dalmatian specimens: KOLOMBATOVIĆ, Druge Zool. Vij. Dalm. p. 23.
- Rhadinæa lineata*, sp. n., JENSEN, Vid. Medd. 1900, p. 105, fig., Lagoa Santa, Brazil.
- Grayia smythii*, Leach. Note by BOULENGER, P. Z. S. 1900, p. 453.
- Ablabes hamptoni*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 409, Burma.
- Contia satunini*, sp. n., NIKOLSKI, Annuaire Mus. St. Petersb. iv, p. 449, Elizabethpol, Transcaucasia.
- Dirosema collare*, sp. n., WERNER, Zool. Anz. xxiii, p. 197, fig., Mexico.
- Atractus badius*, D. & B. and *crassicaudatus*, D. & B. Notes by WERNER, Verh. Ges. Wien l, p. 270.
- Oreocalanus hanitschi*, Blgr., figured by HANITSCH, J. Straits Asiat. Soc. xxxiv, pl. i, fig. 3.

### Opisthoglypha.

- As a result of his experiments on the poison of *Calopeltis*, C. PHISALIX is inclined to regard the opisthoglyphous Snakes as intermediate between the Aglyphous Colubrids and the Proteroglyphous. Bull. Mus. Paris 1900, p. 38.
- Hypsirhina punctata*, Gray, redescribed by WERNER, Zool. Jahrb. Syst. xiii, p. 490.
- Dipsadomorphus cyaneus*, D. & B. On a specimen from Rangoon, Burma: WALL & EVANS, J. Bombay Soc. xiii, p. 188.
- Dipsadoboa unicolor*, Gthr. Note by BOULENGER, P. Z. S. 1900, p. 454.
- Oxyrhopus undulatus*, sp. n., JENSEN, Vid. Medd. 1900, p. 106, fig., Lagoa Santa, Brazil.
- Philodryas campicola*, sp. n., JENSEN, t. c. p. 108, fig., Lagoa Santa, Brazil; *P. laticeps*, sp. n., WERNER, Zool. Anz. xxiii, p. 198, Sta Catharina, Brazil; *P. simonsi*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 185, Andes of Peru.
- Calopeltis monspessulana*, Herm. Experiments on the poison: PHISALIX, Bull. Mus. Paris 1900, p. 33. E. TATON-BAULMONT, Feuille Natural. xxx, p. 85, describes the effects upon himself of the bite of this snake.
- Atractaspis hildebrandti*, Ptrs. = *Calamelaps unicolor*, Rhdt., TORNIER, Zool. Jahrb. Syst. xiv, p. 85.

### Proteroglypha.

- Hydrophis rhombifer*, sp. n., BOULENGER, Ann. Nat. Hist. (7) v, p. 306, Perak Coast.
- Distira wrayi*, sp. n., BOULENGER, t. c. p. 307, Perak Coast; *D. sarawacensis*, sp. n., id., P. Z. S. 1900, p. 184, pl. xiv, fig. 2, Sarawak coast.

- Pseudapistocalamus*, g. n., near *Apistocalamus*, Blgr., and *Pseudelaps*, D. & B., for *P. nymani*, sp. n., LÖNNBERG, Ann. Nat. Hist. (7) vi, p. 578, New Guinea.
- Naja guentheri*, Blgr. = *N. goldii*, Blgr., BOULENGER, P. Z. S. 1900, p. 455.
- Boulengerina annulata*, Buchh. & Peters, figured by BOULENGER, t. c. pl. xxxii.
- Doliophis intestinalis*, Laur., var. n. *vertebralis*, WERNER, Zool. Jahrb. Syst. xiii, p. 491, Sumatra.
- Elaps marçgravi*, Wied, *lemniscatus*, L., and *frontalis*, D. & B. Notes by SEURAT, Bull. Mus. Paris 1900, pp. 230 & 231.

## AMBLYCEPHALIDÆ.

- Amblycephalus nuchalis*, sp. n., BOULENGER, P. Z. S. 1900, p. 185, pl. xvii, fig. 1, Sarawak; *A. vertebralis*, sp. n., BOULENGER, Ann. Nat. Hist. (7) v, p. 307, Perak.

## VIPERIDÆ.

- G. LEIGHTON, Zoologist (4) iv, pp. 393-396, figg., investigates the capacity of the gullet in *Vipera berus* with a view to testing the possibility of its sheltering its young in that region.
- Vipera ursinii*, Bp. On Dalmatian specimens: KOLOMBATOVIĆ, Druge Zool. Vij. Dalm. p. 24; *V. russellii*, Daud. On the shields surrounding the nostril: WALL & EVANS, J. Bombay Soc. xiii, p. 353, fig.
- Echis carinatus*, Schn. On its parturition: F. WALL, J. Bombay Soc. xiii, p. 184; *E. carinatus*, Schn., and *E. coloratus*, Gthr., compared and the latter recorded from Egypt: ANDERSON, Ann. Nat. Hist. (7) vi, p. 419, figg.
- Ancistrodon blomhoffi*, Boie. On its coloration in life: SCHNEE, Zool. Garten xli, p. 395.

## ORNITHOSAURIA.

- E. VAN DEN BROECK, Mem. Soc. Belge Geol. 1900, pp. 105-107, remarks on the Ornithosaurs of the Weald and Purbeck.

## DINOSAURIA.

- H. F. OSBORN, Amer. Natural. xxxiv, pp. 777-799, figg., reconsiders the evidence for a derivation of the birds from the Dinosaurs.
- E. VAN DEN BROECK, Mem. Soc. Belge Geol. 1900, pp. 81-104, compares the Dinosaurs of Bernissart with those hitherto recorded from the Weald and Purbeck of England and the North of France.
- Limnosaurus transylvanicus*, g. and sp. nn., for remains of skulls apparently related to *Iguanodon* and *Hadrosaurus*, F. v. NOPCSA, Denk. Ak. Wien lxxviii, p. 555, 6 pls., Upper Cretaceous of Szentgyerfalva, Hungary.
- Diplodocus*, Marsh. On the vertebral formula: W. J. HOLLAND, Science (2) xi, p. 816; J. B. HATCHER, op. cit. xii, p. 828.
- Zanclodon schützii*, sp. n., for a tooth from the Trias of Hall, Württemberg, E. FRAAS, Jahresh. Ver. Württemb. lvi, p. 510, figg.
- Dinosaurian teeth of the genera *Megalosaurus* and *Pelorosaurus* figured by SAUVAGE, Bull. Soc. geol. France xxviii, pl. ix.
- C. DÉPÉRET, t. c. p. 530, and C.R. Ac. Sci. cxxx, p. 637, announces the discovery of remains of *Critaceomus*, Seeley, in the Upper Cretaceous of the Montagne Noire, near Narbonne, in the South of France.

# EMYDOSAURIA.

- E. VAN DEN BROECK, Mem. Soc. Belge Geol. 1900, pp. 107-112, remarks on the Crocodilians of the Weald and Purbeck.  
 E. A. GOLDI, Zool. Anz. xxiii, pp. 149-151, remarks on the hoof-like expansions of the claws in *Alligator*-embryos.

# CHELONIA.

- G. R. WIELAND, Amer. J. Sci. (4) ix, pp. 413-423, figg., remarks on certain stages in the evolution of the humerus of marine Chelonians.  
 F. SIEBENROCK, SB. Ak. Wien cix, 1, pp. 441-448, pl. —, describes and figures the hyoid apparatus, larynx, and trachea of *Testudo calcarata*, Schn.  
 B. HALLER, Morphol. Jahrb. xxviii, pp. 252-346, pls. xv-xix, investigates the histological structure of the brain of *Emys*.  
 EMILY R. GREGORY, Zool. Jahrb. Anat. xiii, pp. 683-714, pls. xlv-l, has observations on the development of the excretory system in Chelonians.  
 SCHNEE, Zool. Garten xli, pp. 215-217, remarks on water-tortoises feeding on land.  
*Trionyx*, Geoffr. On the fossil species of the Mayence basin: A. v. REINACH, Abh. Senckenb. Ges. xxviii, p. 104, pls. xxxvii-xlii; *T. boulengeri*, p. 104, pls. xxxvii & xxxviii, Oligocene of Alzey, *messelianus*, p. 118, pls. xli & xlii, Miocene (?) of Messel near Darmstadt, spp. nn. (foss.), id. ibid.; *T. preschenensis*, p. 40, pls. i & ii, fig. 1, and *aspidiformis*, p. 44, pl. ii, fig. 2, spp. nn. (foss.), LAUBE, Abh. Ver. Lotos ii, Brown Coal of Bohemia.  
*Sternotherus annuatus*, Smith = *S. nigricans*, Donnd., TORNIER, Zool. Jahrb. Syst. xiii, p. 582.  
*Podocnemis aegyptiaca*, sp. n. (foss.), C. W. ANDREWS, Geol. Mag. (2) Dec. iv, vii, p. 1, pl. i, Lower Miocene, Moghara, Egypt.  
*Platemys werneri*, sp. n., SCHNEE, Zool. Anz. xxiii, p. 463, figg., S. Paulo, Brazil.  
*Plenochelys rectensis*, sp. n. (foss.), HOOLEY, Geol. Mag. (2) Dec. iv, vii, p. 265, Wealden, Isle of Wight.  
*Chelydra argillurum*, sp. n. (foss.), LAUBE, Abh. Ver. Lotos ii, p. 47, pl. ii, fig. 7, Brown Coal of Bohemia.  
*Bellia borneensis*, Gray. Note by WERNER, Zool. Jahrb. Syst. xiii, p. 481.  
*Brookia baileyi*, E. Bartl. On a very large specimen, with remarks on the synonymy: BOULENGER, P. Z. S. 1900, p. 661.  
*Promalacoclemmys*, g. n., near *Malacoclemmys*, Gray, for *P. boulengeri*, sp. n. (foss.), A. v. REINACH, Abh. Senckenb. Ges. xxviii, p. 92, pl. xxx, Miocene of Hessler, near Biebrich.  
*Ocadia*, Gray. On the fossil species: A. v. REINACH, t. c. p. 95, pls. xxxi-xxxvi and xliii; *O. heslerianna*, sp. n. (foss.), id. ibid., p. 95, pl. xxxi, Miocene of Hessler, near Biebrich.  
*Ptychogaster*, Pomel (foss.). Revision of the species by A. v. REINACH, t. c. p. 21, pls. vi-xxix; *P. lepsi*, p. 33, pls. xiv-xvi, Oligocene of Alzey, *erbstadtianus*, p. 55, Miocene of Erbstadt-Kaichen, *francofurtanus*, p. 56, pl. xx, Miocene of Frankfurt/M., *roemeri*, p. 58, pl. xxi, Miocene, Wiesbaden, *boettgeri*, p. 60, pls. xxii-xxvii, Miocene of Hessler near Biebrich, *kinkelini*, p. 76, pls. xxviii & xxix, Miocene of Hessler, spp. nn., id. ibid.  
*Testudo*, L. On the Roumanian species (*T. græca*, *ibera*, *marginata*): RAZNOSANU, Bull. Soc. Bucarest ix, p. 278, figg. L. VAILLANT, Bull.

- Mus. Paris, 1899, p. 354, has remarks concerning the history of the extinct gigantic Tortoise of Reunion, and A. A. FAUVEL, op. cit. 1900, p. 170, on that of Juan de Nove (Farquhar Id.); *T. indica*, Schneid. On the type specimen: VAILLANT, Arch. Mus. Paris (4) ii, p. 25, pl. viii; *T. microphyes*, Gthr. Note by VAILLANT, Bull. Mus. Paris 1900, p. 228; *T. polyphemus*, Daud. Notes on the habits by W. B. FLETCHER, P. Indiana Ac. 1899, p. 46; *T. zarudnyi*, Nik. Note by NIKOLSKI, Annuaire Mus. St. Petersb. iv, p. 375; *T. promarginata*, p. 7, pls. i-iv, and *ptychogastroides*, p. 19, pl. v, spp. nn. (foss.), A. v. REINACH, Abh. Senckenb. Ges. xxviii, Miocene, Mayence Basin.
- Archelon ischyros*, Wieland (foss.). On the skull and pelvis and the probable relationships: WIELAND, Amer. J. Sci. (4) ix, p. 237, figg., pl. ii; *A. marshii*, sp. n. (foss.), id. ibid., p. 248, Fort Pierre Cretaceous, Dakota.
- Protosphargis veronensis*, Capellini (foss.). Remarks by CAPELLINI, Rend. Acc. Bologna (2) ii, 1898, p. 97, pl. —.

## ICHTHYOSAURIA.

- F. BAUER, Anat. Anz. xviii, pp. 574-588, figg., has notes on the structure of the pectoral and pelvic girdles and of the skull of *Ichthyosaurus*.
- E. GEINITZ, N. Jahrb. Min. 1900, i, p. 63, fig., records some Ichthyosaurian vertebrae from the Upper Lias of Dobbertin, Mecklenburg.
- Ichthyosaurus australia*, McCoy (?). On a fragment of jaw from the Flinders R., Queensland: C. W. ANDREWS, P. Z. S. 1900, p. 660, fig.

## PLESIOSAURIA.

- Plesiosaurus shirleyensis*, sp. n., W. C. KNIGHT, Amer. J. Sci. (4) x, p. 115, fig., Jurassic, Rocky Mountains.
- Cimoliosaurus laramiensis*, sp. n., W. C. KNIGHT, t. c. p. 117, fig., Jurassic, Rocky Mountains.
- Stereosternum tumidum*, Cope. Specimen in the Dresden Museum described and figured by GEINITZ, Ann. Soc. geol. Belgique xxv bis, p. 37, pl. i.

## RHYNCHOCEPHALIA.

- H. SCHAUINSLAND, Arch. mikr. Anat. lvi, pp. 747-867, pls. xxxii-xxxiv, has a further contribution to the development of *Sphenodon punctatus*.
- G. B. HOWES & H. H. SWINNERTON, P. Z. S. 1900, pp. 516 & 517, give an abstract of their forthcoming Memoir on the development of the skeleton of *Sphenodon punctatus*.
- R. BURCKHARDT, Geol. Mag. (2) Dec. iv, vii, pp. 486-492, 529-535, figg., pl. xix, gives a description of the remains of *Hyperodapedon gordonii*, Huxley (foss.), and remarks on the affinities of the group of Rhynchocephalians to which it pertains, and which he thinks is connected in a direct line with the lowest forms.
- E. T. NEWTON, P. Geol. Ass. xvi, p. 496, fig., remarks on a bone from the Chalk of Cuxton, possibly a palatine or pterygoid of a Rhynchocephalian such as *Rhynchosaurus*.
- Hyperodapedon minor*, sp. n. (foss.), BURCKHARDT, t. c. p. 492, Trias, Scotland.

## ANOMODONTIA.

- Aristodesmus riitimeyeri*, Wiedersheim [see Zool. Rec. 1896]. Skeleton described and figured by SEELEY, Quart. J. Geol. Soc. lvi, p. 620, figg.
- Dicranozygoma leptoscelus*, g. and sp. nn., apparently Cynodontian, SEELEY, t. c. p. 646, pl. xxxvi, Trias, Cape Colony.
- Eurycarpus oweni*, Seeley. On some newly-discovered remains: SEELEY, t. c. p. 325, figg., pl. xxi.
- Ichtdonuchus*, g. n., for *I. primævus*, sp. n., founded on the remains of a small Theriodont of a generalized type, from the Karoo Beds near Pearston: R. BROOM, Ann. Nat. Hist. (7) vi, p. 314, fig.

## BATRACHIA.

- A. SABATIER, C.R. Ac. Sci. cxxx, pp. 633-637, writes on the morphology of the pelvic girdle in Batrachians.
- P. SCHULZ, Arch. Physiol. 1900, pp. 1-8, figg., writes on the musculature of the stomach in Batrachians.
- H. M. BERNARD, Quart. J. Micr. Sci. xliii, pp. 23-47, pl. iii, investigates the structure of the retina in Batrachians.
- G. TORNIER, Zool. Anz. xxiii, pp. 233-256, figg., remarks on regenerated tails of Batrachians.
- F. RAFFAELE, Anat. Anz. xviii, pp. 337-344, figg., has a note on the genesis of the lateral nerve in Batrachian larvæ. Remarks by KÖLLIKER, t. c. p. 511.
- V. ELLERMANN, Anat. Anz. xviii, pp. 182-189, figg., writes on the slime secretion in the oviduct of Batrachians.
- G. V. CIACCIO, Rend. Acc. Bologna (2) iii, 1899, pp. 95-105, pl. —, compares the spermatozoa of *Molge cristata* with those of *Rana esculenta*.
- R. WIEDERSHEIM, Biol. Centrbl. xx, pp. 304-316, 321, 333, reviews our knowledge of the modes of nursing in the class Batrachia.
- H. LEBRUN, Rev. Quart. Sci. (2) xviii, reviews our knowledge of the oviposition in the Batrachians of Belgium.
- On the earliest use of the name *Batrachia*: T. GILL, Science (2) xii, p. 730.

## ECAUDATA.

- M. BOUIN, Arch. Biol. xvii, pp. 201-383, pls. ix-xii, investigates the histogenesis of the female genital gland in *Rana temporaria*.
- M. BOUIN, Bibliog. anat. viii, pp. 53-59, 103-108, figg., has remarks on the genital glands in tadpoles of *Rana temporaria*.
- R. C. PUNNETT describes the genital glands and ducts in a hermaphrodite *Rana temporaria*. Ann. Nat. Hist. (7) vi, pp. 179 & 180, pl. ix.
- A. POLICARD, C.R. Soc. Biol. lii, pp. 846 & 847, has some remarks on Bidder's organ in the Toad.
- O. V. SRDÍNKO, Anat. Anz. xviii, pp. 500-508, figg., writes on the structure and development of the suprarenal bodies in Tailless Batrachians.
- E. WARREN, Anat. Anz. xviii, pp. 122 & 123, fig., records some abnormalities in the blood-vessels of Frogs.
- T. W. SHORE, J. Anat. Physiol. norm. path. (2) xiv, pp. 398-402, fig., describes an unusual arrangement of the renal portal vein in *Rana temporaria*.



- A. E. SMIRNOW, *Anat. Hefte, Arb.* xiv, pp. 409-431, figg., pls. xvii & xviii, has a contribution to the morphology of the sympathetic ganglion-cells of the Frog.
- J. GAULE, *Arch. ges. Physiol.* lxxxiii, pp. 83-88, pl. iii, has investigated the sexual differences in the weight of the muscles in *Rana esculenta*.
- I. BROMAN, *Anat. Anz.* xvii, pp. 20-30, figg., and *Verh. Anat. Ges.* 1900, pp. 157-164, figg., writes on giant spermatozoa of *Bombinator igneus*, and *Anat. Anz.* xvii, pp. 129-145, figg., on the development and structure of the spermatozoa of this Batrachian.
- J. ARNOLD, *Anat. Anz.* xvii, pp. 517-519, remarks on the demonstration of the expansion of the nerve-terminations in the fungiform papillae of the Frog's tongue.
- S. BAGLIONI, *Arch. Physiol.* 1900, Suppl. pp. 33-59, investigates the mechanism of respiration in the Frog.
- E. GODLEWSKI, JUN., *Bull. Ac. Cracovie* 1900, pp. 232-255, figg., has made experiments on the influence of oxygen on the development of the ovum of *Rana temporaria*.
- K. REUTER, *Anat. Hefte, Arb.* xiii, pp. 339-361, pls. xviii-xx, has investigated the development of the spiral gut of *Alytes obstetricans*, and, *op. cit.* xiv, pp. 433-446, pls. xix & xx, and xv, pp. 625-672, pls. lii-lvi, its regression.
- H. V. WILSON, *Anat. Anz.* xviii, pp. 209-239, & 384, figg., investigates the formation of the blastopore in the Frog egg.
- T. H. MORGAN, *Biol. Bull.* ii, pp. 111-119, figg., has made grafting experiments with embryos of Frogs.
- E. BATAILLON, *C.R. Ac. Sci.* cxxx, pp. 115-118, writes on experimental parthenogenetic segmentation of frog-ova.
- LILIAN V. SAMPSON, *Amer. Natural.* xxxiv, pp. 687-715, gives a summary of the unusual modes of breeding and development in Tailless Batrachians, with a very complete bibliographical index to the subject.
- MAUREL & LAGRIFFE, *C.R. Soc. Biol.* lii, pp. 217-219, have made experiments to ascertain the highest temperature that can be endured by frogs.
- M. LEVY, *Zool. Garten* xli, pp. 178-180, has further observations on the hibernation of Frogs under water.

## PHANEROGLOSSA.

## RANIDÆ.

*Rana cyanophlyctis*, Schn., var. *n. seistanica*, NIKOLSKI, *Annuaire Mus. St. Petersb.* iv, p. 406, Persia; *R. macrodon*, Kuhl, and *tigrina*, Daud. Tadpoles described and figured by S. FLOWER, *P. Z. S.* 1899, pp. 889 & 892, pl. lix, figg. 1 & 2; *R. esculenta*, var. *lessonæ*, Camer., recorded from the Tessin by FATIO, *Rev. Suisse Zool.* viii, p. 474; *R. latastii*, Blgr., recorded from the same part of Switzerland under the erroneous name of *R. græca*, Blgr.: *id. ibid.* p. 474 [Specimen identified as *R. latastii*.—REC.]; *R. temporaria*, L. Recorded from the Scilly Ids. by F. W. TERRY, *Zoologist* (4) iv, p. 383; *R. agilis*, Thom. On its distribution in Germany: WOLTERSTORFF, *Naturw. Wochenschr.* xv, p. 205; *R. forreri*, Blgr., and *pustulosa*, Blgr., figured by GÜNTHER, *Biol. Centr.-Amer., Batr.*, pl. ix, fig. A, & lx, fig. B; *R. aquiplicata*, Werner, described by BOULENGER, *P. Z. S.* 1900, p. 437; *R. novæ-britanniæ*, Werner, described and figured from Sumatra by WERNER, *Zool. Jahrb. Syst.* xiii, p. 493, pl. xxxii, fig. 3; *R. jerboa*, Gthr. Larva (undetermined) noticed and figured by M. WEBER, *Ann. Jard. Botan.*

- Buitenzorg, Suppl. ii, 1898, p. 10, fig.; *R. graminea*, sp. n., BOULENGER, P. Z. S. 1899, p. 958, pl. lxvii, fig. 1, Hainan; *R. pigra*, sp. n., MOCQUARD, Bull. Soc. Philom. (9) ii, p. 109, Madagascar; *R. omiltemana*, p. 200, pl. li, fig. A, Omilteme, Guerrero [= *R. halecina*, Kalm.—REC.], *bonaccana*, p. 201, pl. lx, fig. B, Id. of Bonacca, Yucatan [= *palmipes*, Spix.—REC.], *melanosoma*, p. 203, pl. lxiii, fig. B, Guatemala and Nicaragua [= *palmipes*, Spix.—REC.], and *godmani*, p. 204, pl. lxiii, fig. A, Costa Rica, spp. nn., GÜNTHER, op. cit.
- Staurois hainanensis*, sp. n., BOULENGER, P. Z. S. 1899, p. 958, pl. lxvii, fig. 2, Hainan.
- Scotobleps*, g. n., like *Rana*, but with a vertical pupil: BOULENGER, op. cit. 1900, p. 438; *S. gabonicus*, sp. n., id. ibid. p. 439, pl. xxviii, fig. 1, Gaboon.
- Petropedetes*, Reichenow. On the characters of the three species, and note on *P. (Tympanoceros) newtoni*, Bocage, BOULENGER, t. c. p. 439.
- Phrynobatrachus auritus* and *latirostris*, spp. nn., BOULENGER, t. c. p. 440, pl. xxviii, figs. 2 & 3, Gaboon.
- Arthroleptis africanus*, Hallow., redescribed by BOULENGER, t. c. p. 441; *A. inguinalis*, sp. n., id. ibid. p. 442, pl. xxvii, fig. 2, Gaboon.
- Gamposteonys*, g. n., remarkable for the exposed ungual phalanges of the toes, for *G. batesi*, sp. n., BOULENGER, t. c. p. 442, pl. xxix, Gaboon.
- Trichobatrachus*, g. n., with villose dermal papillæ on the sides, for *T. robustus*, sp. n., BOULENGER, t. c. p. 443, pl. xxx, Gaboon. Remarks on its hair-like papillæ: GADOW, Anat. Anz. xviii, p. 588.
- Dilobates*, g. n., with nearly four toes and a vertical pupil: BOULENGER, t. c. p. 443; *D. platycephalus*, sp. n., id. ibid. p. 444, pl. xxvii, fig. 3, Gaboon.
- Rhacophorus leucomystax*, Gravh. Tadpoles figured by S. FLOWER, P. Z. S. 1899, pl. lix, fig. 3; *R. colletti*, Blgr., and *nigropalmatus*, Blgr., described and figured by WERNER, Zool. Jahrb. Syst. xiii, pp. 494 & 496, pl. xxxii, fig. 4, and pl. xxxiv, fig. 8; *R. reinwardti*, var. n. *lateralis*, id. ibid. p. 495, pl. xxxiii, fig. 6, Sumatra; *P. phyllopygus*, p. 494, pl. xxxii, fig. 5, and *pulchellus*, p. 495, pl. xxxiii, fig. 7, spp. nn., id. ibid., Sumatra; *R. oxycephalus*, sp. n., BOULENGER, P. Z. S. 1899, p. 959, pl. lxvii, fig. 3, Hainan; *R. shelfordi*, sp. n., id. op. cit. 1900, p. 185, pl. xviii, fig. 2, Sarawak.
- Chiromantis kachouskii*, sp. n., NIKOLSKI, Annuaire Mus. St. Petersb. v, p. 246, Abyssinia.
- Ixalus petersi*, sp. n., BOULENGER, P. Z. S. 1900, p. 185, pl. xvii, fig. 3, Sarawak; *I. larutensis* and *vermiculatus*, spp. nn., BOULENGER, Ann. Nat. Hist. (7) vi, p. 187, Perak.
- Ruppia platyceps*, sp. n., BOULENGER, P. Z. S. 1900, p. 444, pl. xxvii, fig. 4, Gaboon.
- Hylambates brevirostris*, Werner. Note by BOULENGER, t. c. p. 445.

## DENDROBATIDÆ.

- Mantella aurantiaca*, sp. n., MOCQUARD, Bull. Soc. Philom. (9) ii, p. 110, Madagascar.
- Cardioglossa*, g. n., with large cordiform tongue, and without bony style to the sternum: BOULENGER, P. Z. S. 1900, p. 445; *C. gracilis*, sp. n., id. ibid. p. 446, fig., Gaboon.

## ENGYSTOMATIDÆ.

- Atelopus varius*, Stann. Varieties figured by GÜNTHER, Biol. Centr.-Amer., Batr. pl. lxii, figg. A-C.

- Oreophrynella quelchii*, Blgr., figured by BOULENGER, Tr. Linn. Soc. London (2) viii, pl. v, fig. 3; *O. macconnelli*, sp. n., id. ibid. p. 55, pl. v, fig. 4, Mt Roraima, Brit. Guiana.
- Calophrynus heterochirus*, sp. n., BOULENGER, P. Z. S. 1900, p. 186, pl. xvii, fig. 4, Sarawak.
- Microhyla ornata*, D. & B. Tadpole described and figured by S. FLOWER, P. Z. S. 1899, p. 902, pl. lx, fig. 1; *M. butleri* and *annectens*, spp. nn., BOULENGER, Ann. Nat. Hist. (7) vi, p. 188, Perak.
- Otophryne*, g. n., allied to *Hypopachus*, for *O. robusta*, sp. n., BOULENGER, Tr. Linn. Soc. London (2) viii, p. 55, pl. v, fig. 5, Mt Roraima, Brit. Guiana.
- Engystoma elegans*, Blgr., figured by GÜNTHER, Biol. Centr.-Amer., Batr. pl. lxii, fig. d.
- Glossostoma*, g. n., near *Engystoma*, for *G. uterrimum*, sp. n., GÜNTHER, op. cit. p. 210, pl. lxiv, fig. a, Costa Rica.

## DYSCOPHIDÆ.

- Dyscophus insularis*, Grand. Note by MOCQUARD, Bull. Soc. Philom. (9) ii, p. 111.

## CYSTIGNATHIDÆ.

- Hylodes polyptychus*, Cope, pl. lxvi, fig. c, *underwoodi*, Blgr., pl. lxvi, fig. d, and *rhodopsis*, Cope, pl. lxvii, fig. c, figured by GÜNTHER, Biol. Centr.-Amer., Batr.; *H. melanostictus*, Cope, figured as *H. brocchii*, Blgr., by GÜNTHER, op. cit. pl. lxviii, figg. A & B; *H. plicatus*, p. 228, pl. lxvi, fig. B, Jalapa, *calcitrans*, p. 230, pl. lxvii, fig. B, Guerrero and Jalisco, *platyrhynchus*, p. 230, pl. lxvii, fig. A, Costa Rica, and *venustus*, p. 234, pl. lxviii, fig. c, Jalapa, spp. nn., id. ibid.; *H. marmoratus*, sp. n., BOULENGER, Tr. Linn. Soc. London (2) viii, p. 56, pl. v, fig. 6, Mt Roraima, Brit. Guiana.
- Liophyla guentheri*, Kef., pl. lxvi, fig. A, and *fleischmanni*, Bttgr., pl. lxiv, fig. B, figured by GÜNTHER, op. cit.; *L. pittieri*, p. 223, pl. lxv, fig. B, and *engytympanum*, p. 224, pl. lxv, fig. A [= *Hylodes melanostictus*, Cope.—REC.] spp. nn., id. ibid., Costa Rica.
- Syrrhaptes omiltemanus*, sp. n., GÜNTHER, Biol. Centr.-Amer., Batr. p. 216, Omilteme, Guerrero.
- Paludicola simonsii*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 182, Andes of Peru.
- Tomodactylus*, g. n., differing from *Paludicola*, Wagl., in the presence of digital disks, for *T. amulae*, sp. n., GÜNTHER, Biol. Centr.-Amer., Batr. p. 219, pl. lxiv, fig. c, Amula, Guerrero.

## BUFONIDÆ.

- Nectophryne afra*, Ptrs. Note by BOULENGER, P. Z. S. 1900, p. 436, fig.
- Bufo penangensis*, Stol. Tadpole described and figured by S. FLOWER, P. Z. S. 1899, p. 909, pl. lx, fig. 3; *B. vulgaris*, Laur. L. CAMERANO, Atti Acc. Torino (2) l, p. 81, 2 pls., studies the variations of this species, principally by the statistical method. The Eastern form, from Japan, is separated as a distinct species under the name of *B. prætextatus*, Boie; *B. viridis*, Laur., var. n. *persica*, NIKOLSKI, Annuaire Mus. St. Petersburg. iv, p. 406, Persia; *B. cophotis*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 181, Andes of Peru; *B. lati-*

- frons*, sp. n., BOULENGER, P. Z. S. 1900, p. 435, pl. xxvii, fig. 1, Gaboon.  
*Nectes subasper*, Tsch., figured by WERNER, Zool. Jahrb. Syst. xiii, pl. xxxv, fig. 10; *N. sumatranus*, sp. n., id. ibid. p. 497, pl. xxxv, fig. 9, Sumatra.

## HYLIDÆ.

- Hyla arborea*, L. On the colour-changes: F. W. GAMBLE, Tr. Manchester Micr. Soc. 1899, p. 96; *H. dolichopsis*, Cope. Note on a young specimen: LÖNNBERG, Ann. Nat. Hist. (7) vi, p. 580; *H. impura*, Peters & Doria, redescribed, id. ibid. p. 581; *H. eucnemis* and *obsoleta*, spp. nn., LÖNNBERG, t. c. pp. 579 & 580, German New Guinea.  
*Nototrema peruanum*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 181, Andes of Peru.

## PELOBATIDÆ.

- Leptobrachium baluense*, Blgr., figured by HANITSCH, J. Straits Asiat. Soc. xxxiv, pl. ii, fig. 1; *L. heteropus*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 186, Perak.  
*Megalophrys montana*, Kuhl. On the larva: M. WEBER, Ann. Jard. Bot. Buitenzorg, Suppl. ii, 1898, p. 5, figg.; *M. nasuta*, Schleg. Note by WERNER, Zool. Jahrb. Syst. xiii, p. 498.

## DISCOGLOSSIDÆ.

- Discoglossus pictus*, Otth. Remarks on Corsican specimens: WOLTERSTORFF, Zool. Anz. xxiii, p. 23.  
*Bombinator igneus*, Laur. [should be *B. pachypus*, Bp.]. On its occurrence in the Province Modena: PICAGLIA, Atti Soc. Modena (4) i, p. 120.

## AGLOSSA.

- W. G. RIDGEWOOD, J. Linn. Soc. xxvii, pp. 454-462, describes the hyobranchial skeleton, the larynx, and the carpus of *Hymenochirus boettgeri*, Torn.  
*Xenopus calcaratus*, Ptrs. Has only seven presacral vertebrae: BOULENGER, P. Z. S. 1900, p. 434.

## CAUDATA.

- W. WOLTERSTORFF, Feuille Natural. xxxi, p. 33, remarks on the Tailed Batrachians of the Palearctic Region.  
 J. P. MOORE, P. Ac. Philad. 1900, pp. 613-622, remarks on the mode of articulation of the vertebrae in American Salamandrids, and the changes undergone by them with age.  
 F. SMITH, Amer. Natural. xxxiv, pp. 635-638, fig., publishes additional data on the number of vertebrae and the position of the sacrum in *Necturus*.  
 MME. PHISALIX issues a book dealing with the embryology, histology and physiology of the poison glands of *Salamandra maculosa* (Paris, 8vo).  
 The same author, C.R. Soc. Biol. lii, pp. 178-180, 479-483, and Bull. Mus. Paris, 1900, pp. 72-75, also writes on the cells called "clasmatoocytes" and on the glands in the skin of *Salamandra maculosa*, and, Bull. Mus. Paris 1900, pp. 294-300, has further remarks on the embryology

- and physiology of the same Batrachian. Remarks by P. ANCKL, C.B. Soc. Biol. iii, pp. 960-961, 1060 & 1061, and C. PHISALIX, t. c. pp. 962, 1060 & 1061.
- MARY A. BOWERS, P. Amer. Ac. xxxvi, pp. 179-192, 3 pls., writes on the peripheral distribution of the cranial nerves of *Spelerpes fulineus*.
- R. E. BAXSLEY, Biol. Bull. ii, pp. 87-104, figg., writes on the esophageal glands of Tailed Batrachians.
- E. SCHARF, Arch. anat. micr. iii, pp. 140-145, pl. viii, investigates the blood-vessels and lymphatic vessels in the lung of *Molge cristata*.
- G. VALENTI, Verh. Anat. Ges. 1901, pp. 180-194, figg., remarks on the developmental relations between the capsule of the pronephros and the musculature of the ventral region and limbs in the Anolod.
- C. H. EICHSMANN, P. Indiana Ac. 1898, pp. 31-46, figg., and Science 3 xi, pp. 492-503, figg., discusses degeneration in the eyes of the Batrachians of the North American Caves. The same author makes a special study of the eyes of *Typhlomolge rathbuni* Stejneger. Tr. Amer. Micr. Soc. xii, pp. 49-60, pls. iii & iv.
- C. H. EICHSMANN & W. A. DUNN, Biol. Bull. ii, pp. 33-41, figg., write on the structure and ontogenic degeneration of the eyes of *Typhlotritium spelerus*, Stejneger.
- A. FISCHER, Anat. Hefte. Arb. xiv, pp. 1-255, figg., pls. i-ix, has a memoir on the regeneration of the lens in larvae of *Salamandris maculosa*, and op. cit. xv, pp. 233-266, pl. xxvii, investigates the histological structure of the cornea in the larva of *Salamandris maculosa*.
- H. BLANC, Arch. Sci. Nat. 4<sup>e</sup> x, pp. 571 & 572, has observations on the development of the epiphysis and the paraphysis in *Salamandris atra*.
- F. LIVIST, Monit. Zool. ital. xi, pp. 365-370, pl. xv, investigates some points in the development of the branchial region in *Salamandris parvipillata*.
- J. A. JANSSENS, Anat. Anz. xvii, pp. 520-524, figg., has observations on the spermatogenesis in *Molge*.
- G. EISEN, Biol. Bull. i, pp. 90-113, figg., gives a preliminary account of the spermatogenesis of *Batrachus attenuatus*.
- E. OLIVIER, Rev. Sci. Bourbonnais xiii, pp. 103-106, gives radiographic figures of tailed Batrachians with regenerated limbs.
- W. TOKKOFF, SB. Ak. Berlin 1900, pp. 794-797, fig., has made experiments on the artificial production of double embryos of Newts.
- ANNIE J. BARROWS, Anat. Anz. xviii, pp. 461-464, figg., has made experiments on the supposed respiratory organs of the esophagus in the lungless *Desmognathus fusca*.
- COCYTHES MARIA V. LINDEN, Biol. Centrbl. xx, pp. 144-167, 226-241, figg., has studied the ontogenetic development of the system of markings in the German species of *Molge*.
- F. LAESECKE, Zool. Garten xli, p. 53, has observed the fecundation of *Molge palmata*, and has notes on the eggs of other European Newts.
- Salamandris maculosa*, LAUR. Observations on the habits by MAXE PHISALIX, Rech. embryol. Sal. terr. p. 5.
- Molge*, MEY. *Triton cristatus*, subsp. *meridionalis*, n. n. for var. *burleini*, Strauch: FATIO, Rev. Suisse Zool. viii, p. 474; *M. vulgaris*, var. *meridionalis*, Bigr. Note by FATIO, t. c. p. 475. On Dalmatian specimens: KOLOMBATOVIC, Druge Zool. Vij. Dalm. p. 26. On branchiate breeding specimens: BANCHI, Monit. Zool. ital. xi, p. 194, figg.; *M. blasi*, de Fisle. Note on the larva: LAESECKE, Zool. Garten xli, p. 54; *M. palmata*, Schn. On its occurrence in Thuringia: W. GERBING, Zeitschr. Naturw. lxxiii, p. 452; *M. pyrrhogaster*, Boie. Notes on living specimens: SCHNEIDER, Natur u. Haus viii, p. 244.
- Euproctus*, GENÉ. The species of this section of the genus *Molge* reviewed and figured by WOLFFSTORFF, Feuille Natural. xxi, p. 36, pl. v.

- Amblystoma*, Tsch. On a remarkable form of Axolotl from North Dakota :  
H. L. OSBORN, Amer. Natural. xxxiv, p. 551, figg.  
*Spelerpes adspersus*, Ptrs. Note by WERNER, Verh. Ges. Wien l, p. 272.  
*Megalobatrachus maximus*, Schleg. Notes on living specimens : SCHNEER,  
Natur u. Haus viii, p. 246.  
*Necturus maculosus*, Raf. On its occurrence in the Lower Delaware River :  
H. W. FOWLER, Science (2) xi, p. 555.  
*Typhlomolge rathbuni*, Stejneger. Notes on and figures of living specimens :  
W. W. NORMAN, Amer. Natural. xxxiv, p. 179, figg.  
*Proteus anguinus*, Laur. On living specimens in the Paris Museum :  
A. VIRÉ, Bull. Mus. Paris 1900, p. 174.

## APODA.

- A. BRAUER, Zool. Anz. xxiii, pp. 353-358, writes on the development of  
the excretory organs of *Hypogeophis*.

## STEGOCEPHALA.

- J. WARD, Rep. North Staffordsh. Club xxxiv, pp. 101-107, remarks on the  
Labyrinthodonts of the North Staffordshire Coalfield.  
*Dasyceps*, Huxley. On a skull from the Keuper Sandstone of Stanton,  
Staffordshire : J. WARD, t. c. p. 108, pls. iv & v.  
*Eryops megacephalus*, Cope. Coraco-scapula and tooth described and  
figured by WILLISTON, Kansas Quart. viii, p. 185, pls. xxvii & xxix.  
*Batrachichnus plainvillensis*, g. and sp. nn., for footprints on Carboniferous  
shales at Plainville, Massachusetts. WOODWORTH, Bull. Geol. Soc.  
Amer. xi, p. 453, pl. xl.



## V. PISCES.

BY

G. A. BOULENGER, F.R.S.

## CONTENTS.

	Page		Page
I. TITLES . . . . .	1	Systematic ( <i>continued</i> ).	
II. GENERAL SUBJECT . . . . .	13	Lophobranchii . . . . .	30
III. FAUNÆ . . . . .	13	Plectognathi . . . . .	30
IV. PALÆONTOLOGY . . . . .	16	Ganoidei . . . . .	30
V. REFERENCES ARRANGED		Crossopterygii . . . . .	31
SYSTEMATICALLY		Dipneusti . . . . .	31
Teleostomi . . . . .	16	Arthrodiri . . . . .	31
Teleostei . . . . .	16	Ostracophori . . . . .	31
Acanthopterygii . . . . .	17	Holocephali . . . . .	31
A. Pharyngognathi . . . . .	22	Elasmobranchii . . . . .	32
Anacanthini . . . . .	23	Cyclostomi . . . . .	33
Physostomi . . . . .	24	Leptocardii . . . . .	34

## I. TITLES.\*

- ACLOQUE, A. Faune de France. Les Poissons, les Reptiles, les Batraciens, les Protochordes. Paris, 1900, 18°, pp. 339-548, figg.
- ALCOCK, A. Illustrations of the Zoology of the Royal Indian Marine Survey Ship Investigator. Fishes, Part VII. Calcutta, 1900, 4to, pls. xxvii-xxxv.
- ALLIS, E. P. The Pseudobranchial Circulation in *Amia calva*. Zool. Jahrb. Anat. xiv, pp. 107-134, pl. vi.
- The Lateral Sensory Canals of *Polypterus bichir*. Anat. Anz. xvii, pp. 433-451, figg.
- The Premaxillary and Maxillary Bones and the Maxillary and Mandibular Breathing Valves of *Polypterus bichir*. Op. cit. xviii, pp. 257-289, figg.

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.



ANDERSSON, L. G. Några anteckningar om *Orthogoriscus mola* (L.).  
Ofv. Ak. Forh. 1900, pp. 603-633.

ASCROFT, R. L. Note on the American Shad. P. Liverp. biol. Soc. xiv,  
pp. 173 & 174.

— Notes on the White Fluke or Flounder. T. c. pp. 174-177.

\*BADE, E. Die mitteleuropäische Süßwasserfische. Berlin, 1900, 8vo,  
Lief. i-iii, pp. 17-48, pls.

BARRETT-HAMILTON, G. E. H. A Suggestion as to a possible mode of  
Origin of some of the Secondary Characters in Animals as afforded  
by Observations on certain Salmonoids. P. Cambridge Soc. x,  
pp. 279-285.

BARTON, J. K. A Contribution to the Anatomy of the Digestive Tract in  
*Salmo salar*. J. Anat. Physiol. norm. path. (2) xiv, pp. 295-300,  
pls. xi-xliii.

BATAILLON, E. La segmentation parthénogénétique expérimentale chez  
les Amphibiens et les Poissons. C.R. Ac. Sci. cxxx, pp. 115-118.

— Recherches expérimentales sur l'évolution de la Lamproie (*Petromy-  
zon planeri*). T. c. pp. 1413-1415.

— Blastotomie spontanée et larves jumelles chez *Petromyzon planeri*.  
T. c. pp. 1201 & 1202.

— Le blastoderme et le parablaste chez les Poissons osseux. C.R.  
Ass. Franc. xviii, ii, pp. 529-533.

— Sur le développement de la pigmentation chez des métis de  
Poissons osseux. T. c. pp. 533-537.

BEARD, J. A Thymus-Element of the Spiracle in *Raja*. Anat. Anz.  
xviii, pp. 359-363.

— The Morphological Continuity of the Germ-Cells in *Raja batia*.  
T. c. pp. 465-485.

BEDFORD, F. P. Notes on the Occurrence of *Amphiarus* at Singapore.  
Nature lxi, pp. 444 & 445, fig.

BREG, L. S. The Fishes of Lake Baikal [Russian text]. Annuaire Mus.  
St. Petersb. v, pp. 326-372, pl. viii.

BLANC, E. Répertoire des Poissons d'eau douce de la Russie. Ann. Sci.  
Nat. (6) xi, pp. 251-275.

✓ BLOCH, L. Schwimmblase, Knochenkapsel und Weber'scher Apparat von  
*Nemachilus barbatulus* Günther. Jena. Zeitschr. xxxiv, pp. 1-57, figg.,  
pls. i & ii.

BOLAM, G. Lesser Fork-beard, or Tadpole Fish, *Rhiniceps trifurcatus*  
(Turton). Hist. Berwick. Club xvii, p. 112.

BOULENGER, G. A. Matériaux pour la Faune du Congo. Poissons  
nouveaux du Congo. Sixième Partie: Mormyres, Characins, Cyprinés,  
Silures, Acanthoptérygiens, Dipneustes. Ann. Mus. Congo. Zool. i,  
pp. 129-164, pls. xlviii-lvi.

— Fishes. Victoria History of Counties of England. Hampshire  
and the Isle of Wight, i, pp. 197-203.

— On the Reptiles, Batrachians, and Fishes collected by the late  
Mr John Whitehead in the Interior of Hainan. P. Z. S. 1889,  
pp. 956-962, pls. lvi-lxix.

- [BOULENGER, G. A.] Exhibition of, and remarks upon, a specimen of *Polypterus lapradii* with large external gills. Op. cit. 1900, p. 267.
- List of the Fishes collected by Mr J. S. Budgett in the River Gambia. T. c. pp. 511-516.
- Descriptions of two new Atherinoid Fishes from Mexico. Ann. Nat. Hist. (7) v, pp. 54 & 55.
- Descriptions of three new species of Siluroid Fishes from Southern Brazil. T. c. pp. 165 & 166.
- Description of a new Sea-Horse (*Hippocampus*) from Muscat. Op. cit. vi, pp. 51 & 52, fig.
- A List of the Fishes collected by Mr Rupert Vallentin in the Falkland Islands. T. c. pp. 52-54.
- Diagnoses of new Fishes discovered by Mr J. E. S. Moore in Lake Tanganyika. I. *Cyprinidae*, *Siluridae*. T. c. pp. 478-481.
- On some little-known African Silurid Fishes of the Subfamily *Doradinae*. T. c. pp. 520-529.
- Viaggio del Dr A. Borelli nel Matto Grosso e nel Paraguay. Liste des Poissons recueillis à Urucum et à Carandasiñho, près de Corumbá. Boll. Mus. Torino xv, no. 370, 4 pp.
- Descriptions of new Fishes from the Cape of Good Hope. Mar. Invest. S. Afr. no. 8, pp. 10-12, 3 pls.
- On a Specimen of *Lophotes cepedianus* from the Cape of Good Hope. T. c. p. 13, 1 pl.
- BRIDGE, T. W. The Air-bladder and its Connection with the Auditory Organ in *Notopterus borneensis*. J. Linn. Soc. xxvii, pp. 503-540, pls. xxxvi & xxxvii.
- BRINDLEY, H. H. Note on some Abnormalities of the limbs and tail of Dipnoan Fishes. P. Cambridge Soc. x, pp. 325-327.
- BROWN, C. Ueber das Genus *Hybodus* und seine systematische Stellung. Palæontogr. xlvii, pp. 149-174, figg., pls. xv & xvi.
- BUDGETT, J. S. On some Points in the Anatomy of *Polypterus*. Abstract. P. Z. S. 1900, pp. 430-433.
- Observations on *Polypterus* and *Protopterus*. P. Cambridge Soc. x, pp. 236-240.
- BUFFA, E. Recherches expérimentales sur la toxicité du sang de la Lamproie. Arch. ital. Biol. xxxiii, pp. 177-185.
- BURCHARDT, E. Beiträge zur Kenntniss des *Amphioxus lanceolatus*, nebst einem ausführlichen Verzeichniss der bisher über *Amphioxus* veröffentlichten Arbeiten. Jena. Zeitschr. xxxiv, pp. 719-832, pls. xviii-xxvi.
- BURCKHARDT, R. Beiträge zur Anatomie und Systematik der Læmargiden. Anat. Anz. xviii, pp. 488-492, figg.
- On the Luminous Organs of Selachian Fishes. Ann. Nat. Hist. (7) vi, pp. 558-568, figg.
- BUXBAUM, L. Der Zug der Mainfische im Frühjahr 1899 u. 1900. Zool. Garten xli, pp. 55 & 56, 390-392.
- CARDOSO, J. Notas Africanas. III. Ichthyologia Cabo-Verdiana. Ann. Sci. Nat. Porto vi, pp. 33-49.

- CATOIS, —. Recherches histologiques sur les voies olfactives et sur les voies cérébelleuses chez les Téléostéens et les Sélaciens. C.R. Ass. Franc. xxviii, 11, pp. 515-519.
- CHUN, C. Aus den Tiefen des Weltmeeres. Schilderung von der deutschen Tiefsee-Expedition. Jena, 1900, 8vo, 549 pp., figg.
- CIACCIO, G. V. Osservazioni microscopiche intorno agli organi elettrici delle Torpedini. Mem. Acc. Bologna (5) vii, pp. 213-245, 4 pla.
- , Observations microscopiques sur les organes électriques des Torpilles. Arch. ital. Biol. xxxiii, pp. 51-72, 2 pla.
- CLARKE, W. E. The Fishes of the Firth of Forth and its Tributaries: Species added since Dr Parnell's 'Essay' of 1837. Ann. Scott. Nat. Hist. 1900, pp. 8-17, 202-215.
- , Occurrence of the Long-finned Tunny off the Orkney Islands. T. c. p. 248.
- COUTIERE, H. Les Poissons nuisibles. Caus. Sci. Soc. Zool. France 1900, pp. 25-36.
- COX, P. Fresh-water Fishes and Batrachia of the Peninsula of Gaspé, P. Q., and their distribution in the Maritime Provinces of Canada. Tr. R. Soc. Canada (2) v, pp. 141-154.
- CRAWFORD, J. On the Rectal Glands of the Elasmobranchs. P. R. Soc. Edinb. xxiii, pp. 55-60, pl.
- CUNNINGHAM, J. T. Sexual Dimorphism in the Animal Kingdom. A Theory of the Evolution of Secondary Sexual Characters. London, 1900, 8vo, 317 pp., figg.
- , The Fauna and Flora of Valencia Harbour on the West Coast of Ireland. VI. On Young Stages of Teleosteans. P. Irish Ac. (3) v, pp. 752 & 753.
- DEAN, B. The Devonian "Lamprey," *Palaeospondylus gunni* Traquair, with notes on the Systematic Arrangement of the Fish-like Vertebrates. Mem. N. York Ac. ii, pp. 1-32, pl. i.
- , The Egg of the Hag-Fish, *Myrine glutinosa*. T. c. pp. 33-46, pl. ii.
- DELFIN, F. Descripción de un nuevo Traquinido chileno (*Notothenia porteri*). Revist. chilena iii, 1899, pp. 117-120.
- , Nota de Ictiología. El nuevo género *Cilus*. Act. Soc. Chili x, pp. 53-60, figg.
- DE-TONI, G. B. Degli studi intorno agli alimenti dei Pesci (a proposito di una recente pubblicazione del Dr Mario Suster). Nuova Notarisia x, 1899, pp. 21-27.
- DOLLO, L. *Cryodraco antarcticus*, Poisson abyssal nouveau, recueilli par l'Expédition antarctique belge (communication préliminaire). Bull. Ac. Belgique 1900, pp. 128-137.
- , *Gerlachea australis*, Poisson abyssal nouveau, recueilli par l'Expédition antarctique belge (communication préliminaire). T. c. pp. 194-206.
- , *Racovitzia glacialis*, Poisson abyssal nouveau, recueilli par l'Expédition antarctique belge (communication préliminaire). T. c. pp. 316-327.

- [DOLLO, L.] *Macrurus lecointei*, Poisson abyssal nouveau, recueilli par l'Expédition antarctique belge (communication préliminaire). T. c. pp. 383-401.
- DUNCKER, G. Variation und Asymmetrie bei *Pleuronectes fesus* L. Wiss. Meeresuntersuch. (2) iii, pp. 333-402, figg., pls. xi-xiv.
- . Variation und Asymmetrie bei *Pleuronectes fesus* L., statistisch untersucht. Zool. Anz. xxiii, pp. 141-148.
- . Biologische Beobachtungen an Lophobranchiern. Abh. Ver. Hamburg xvi, no. 3, 12 pp.
- EASTMAN, C. R. Fossil Lepidosteids from the Green River Shales of Wyoming. Bull. Mus. Harvard xxxvi, pp. 67-75, 2 pls.
- . Karpinsky's genus *Helicoprion*. Amer. Natural. xxxiv, pp. 579-582, fig.
- . New Fossil Bird and Fish Remains from the Middle Eocene of Wyoming. Geol. Mag. (2) Dec. iv, vii, pp. 54-58, pl. iv.
- EDINGER, L. Das Gedächtniss der Fische. Ber. Senckenberg. Ges. 1900, pp. cvii-cxvi.
- EIGENMANN, C. H. Degeneration in the Eyes of the Cold-blooded Vertebrates of the North American Caves. P. Indiana Ac. 1899, pp. 31-46, figg. Also Science (2) xi, pp. 492-503, figg.
- . Causes of Degeneration in Blind Fishes. Popular Science Monthly lvii, pp. 399-405, figg.
- . The Development of the Conger Eel. Science (2) xii, pp. 401 & 402.
- EIGENMANN, C. H. & SHAFER, G. D. The Mosaic of Single and Twin Cones in the Retina of Fishes. Amer. Natural. xxxiv, pp. 109-118, figg.
- EMMERT, J. Beiträge zur Entwicklungsgeschichte der Selachier, insbesondere nach Untersuchungen an jüngeren Embryonen von *Torpedo marmorata*. Arch. mikr. Anat. lvi, pp. 459-490, figg., pl. xx.
- EVERMANN, B. W. Descriptions of two new Species of Darters from Lake Maxinkuckee, Indiana. Rep. U.S. Fish. Comm. f. 1899, pp. 363-367, pl. xvii.
- . Some Observations concerning Species and Subspecies. Science (2) xi, pp. 450-454.
- & KENDALL, W. C. Check-List of the Fishes of Florida. Rep. U.S. Fish. Comm. f. 1899, pp. 35-103.
- & MARSH, M. C. Descriptions of New Genera and Species of Fishes from Puerto Rico. T. c. pp. 351-362.
- FESTA, E. Di un caso di icterismo nel *Petromyzon planeri* Bloch. Boll. Mus. Torino xv, no. 367, 2 pp.
- FOREL, F. A. Mélanges ichthyologiques. Arch. Sci. Nat. (4) x, pp. 76 & 77.
- FOWLER, H. W. Note on *Ameiurus prosthistius*. P. Ac. Philad. 1900, pp. 352-355.
- . Contributions to the Ichthyology of the Tropical Pacific. T. c. pp. 493-528, pls. xviii-xx.

- FOX, H. Notes on the Geology and Fossils of some Devonian Rocks on the North Coast of Cornwall. *Geol. Mag.* (2) Dec. iv, vii, pp. 145-152, pl. vii.
- FUCHS, T. Ueber die Natur der Edestiden, mit besonderer Rücksicht auf die Gattung *Halicoprion*. *SB. Ak. Wien* cix, i, pp. 5-9, figg.
- FÖRBRINGER, M. Zur systematischen Stellung der Myxinoiden und zur Frage des alten und neuen Mundes. *Morphol. Jahrb.* xxviii, pp. 478-482.
- FÖRST, C. M. Ringförmige Bildungen im Kopf- und Spinalganglienzellen bei Lachsembryonen. *Anat. Anz.* xviii, pp. 253-255, figg.
- GLADMAN, N. Additions to the Ichthyological Fauna of the Bermudas, from the Collections of the Yale Expedition of 1898. *Tr. Connect. Ac.* x, pp. 510-512.
- GLANTZAU, W. Preliminary Experiments on the Rearing of Sea-Fish Larvae. *J. Mar. Biol. Ass.* (2) vi, pp. 70-93.
- Gadus aomori* (Nilas.) in shallow water. T. c. pp. 274 & 275.
- An Albino Hake (*Merluccius merluccius*). T. c. pp. 275 & 276.
- & BYRNIE, L. W. The Fauna of the Salcombe Estuary. *Pisces*. T. c. pp. 214 & 215.
- GLANTZAU, S. Beiträge zur Physiologie des elektrischen Organes der Zitterrochen. *Abh. Sachs. Ges.* xxv, pp. 253-368, 4 pls.
- Die Veränderungen in den Ganglienzellen des elektrischen Lappens der Zitterrochen nach Durchschneidung der aus ihm entspringenden Nerven. *Arch. Anat.* 1900, pp. 133-154, pls. viii & ix.
- GLANVILLE, W. H. On the Origin of Vertebrates, deduced from the Study of *Ammonoites*. Parts v-viii. *J. Anat. Physiol. norm. path.* (2) xiv, pp. 465-596, figg., pls. lvi & lvii.
- GLIACIMINI, R. Sul pancreas dei Petromisanti con particolare riguardo al pancreas di *Petromiscus marinus*. *Verh. Anat. Ges.* 1900, pp. 44-52, figg.
- GLIANI, A. Sur l'adaptation brusque de l'Équinache (*Gasterosteus aculeatus* Chr.) aux eaux alternativement douces et marines. *C.R. Soc. Biol.* lx, pp. 46-48.
- Sur un cas de Paléostrophie chez la Lèche d'étrang (*Gobius niger* L.). T. c. pp. 28 & 29.
- GLIMERT, C. H. Results of the Reanier-Agassiz Expedition to Brazil in the Fishes. *P. Washington Ac.* ii, pp. 161-184, pl. x.
- GLIN, T. & SMITH, H. M. The Mackerel Fish in American Waters. *Science* (2) ix, pp. 273 & 274.
- GLIN, T. The Mackerel Fish of the Sea. *P. R. Inst. Sci.* xix, pp. 1-12 & 134.
- GLORIEUX, J. Notes de la "Kampfer" des Océanographes. *Doc. Ann. Mus.* pp. 26-28, figg.
- GLORIEUX, J. H. Contribution à l'étude de la faune de poissons de l'océan Atlantique. I. Les poissons de l'Atlantique. *Ann. Mus.* pp. 1-12, 134-135, 136-137, 138-139, 140-141, 142-143, 144-145, 146-147, 148-149, 150-151, 152-153, 154-155, 156-157, 158-159, 160-161, 162-163, 164-165, 166-167, 168-169, 170-171, 172-173, 174-175, 176-177, 178-179, 180-181, 182-183, 184-185, 186-187, 188-189, 190-191, 192-193, 194-195, 196-197, 198-199, 200-201, 202-203, 204-205, 206-207, 208-209, 210-211, 212-213, 214-215, 216-217, 218-219, 220-221, 222-223, 224-225, 226-227, 228-229, 230-231, 232-233, 234-235, 236-237, 238-239, 240-241, 242-243, 244-245, 246-247, 248-249, 250-251, 252-253, 254-255, 256-257, 258-259, 260-261, 262-263, 264-265, 266-267, 268-269, 270-271, 272-273, 274-275, 276-277, 278-279, 280-281, 282-283, 284-285, 286-287, 288-289, 290-291, 292-293, 294-295, 296-297, 298-299, 300-301, 302-303, 304-305, 306-307, 308-309, 310-311, 312-313, 314-315, 316-317, 318-319, 320-321, 322-323, 324-325, 326-327, 328-329, 330-331, 332-333, 334-335, 336-337, 338-339, 340-341, 342-343, 344-345, 346-347, 348-349, 350-351, 352-353, 354-355, 356-357, 358-359, 360-361, 362-363, 364-365, 366-367, 368-369, 370-371, 372-373, 374-375, 376-377, 378-379, 380-381, 382-383, 384-385, 386-387, 388-389, 390-391, 392-393, 394-395, 396-397, 398-399, 400-401, 402-403, 404-405, 406-407, 408-409, 410-411, 412-413, 414-415, 416-417, 418-419, 420-421, 422-423, 424-425, 426-427, 428-429, 430-431, 432-433, 434-435, 436-437, 438-439, 440-441, 442-443, 444-445, 446-447, 448-449, 450-451, 452-453, 454-455, 456-457, 458-459, 460-461, 462-463, 464-465, 466-467, 468-469, 470-471, 472-473, 474-475, 476-477, 478-479, 480-481, 482-483, 484-485, 486-487, 488-489, 490-491, 492-493, 494-495, 496-497, 498-499, 500-501, 502-503, 504-505, 506-507, 508-509, 510-511, 512-513, 514-515, 516-517, 518-519, 520-521, 522-523, 524-525, 526-527, 528-529, 530-531, 532-533, 534-535, 536-537, 538-539, 540-541, 542-543, 544-545, 546-547, 548-549, 550-551, 552-553, 554-555, 556-557, 558-559, 560-561, 562-563, 564-565, 566-567, 568-569, 570-571, 572-573, 574-575, 576-577, 578-579, 580-581, 582-583, 584-585, 586-587, 588-589, 590-591, 592-593, 594-595, 596-597, 598-599, 600-601, 602-603, 604-605, 606-607, 608-609, 610-611, 612-613, 614-615, 616-617, 618-619, 620-621, 622-623, 624-625, 626-627, 628-629, 630-631, 632-633, 634-635, 636-637, 638-639, 640-641, 642-643, 644-645, 646-647, 648-649, 650-651, 652-653, 654-655, 656-657, 658-659, 660-661, 662-663, 664-665, 666-667, 668-669, 670-671, 672-673, 674-675, 676-677, 678-679, 680-681, 682-683, 684-685, 686-687, 688-689, 690-691, 692-693, 694-695, 696-697, 698-699, 700-701, 702-703, 704-705, 706-707, 708-709, 710-711, 712-713, 714-715, 716-717, 718-719, 720-721, 722-723, 724-725, 726-727, 728-729, 730-731, 732-733, 734-735, 736-737, 738-739, 740-741, 742-743, 744-745, 746-747, 748-749, 750-751, 752-753, 754-755, 756-757, 758-759, 760-761, 762-763, 764-765, 766-767, 768-769, 770-771, 772-773, 774-775, 776-777, 778-779, 780-781, 782-783, 784-785, 786-787, 788-789, 790-791, 792-793, 794-795, 796-797, 798-799, 800-801, 802-803, 804-805, 806-807, 808-809, 810-811, 812-813, 814-815, 816-817, 818-819, 820-821, 822-823, 824-825, 826-827, 828-829, 830-831, 832-833, 834-835, 836-837, 838-839, 840-841, 842-843, 844-845, 846-847, 848-849, 850-851, 852-853, 854-855, 856-857, 858-859, 860-861, 862-863, 864-865, 866-867, 868-869, 870-871, 872-873, 874-875, 876-877, 878-879, 880-881, 882-883, 884-885, 886-887, 888-889, 890-891, 892-893, 894-895, 896-897, 898-899, 900-901, 902-903, 904-905, 906-907, 908-909, 910-911, 912-913, 914-915, 916-917, 918-919, 920-921, 922-923, 924-925, 926-927, 928-929, 930-931, 932-933, 934-935, 936-937, 938-939, 940-941, 942-943, 944-945, 946-947, 948-949, 950-951, 952-953, 954-955, 956-957, 958-959, 960-961, 962-963, 964-965, 966-967, 968-969, 970-971, 972-973, 974-975, 976-977, 978-979, 980-981, 982-983, 984-985, 986-987, 988-989, 990-991, 992-993, 994-995, 996-997, 998-999, 1000-1001, 1002-1003, 1004-1005, 1006-1007, 1008-1009, 1010-1011, 1012-1013, 1014-1015, 1016-1017, 1018-1019, 1020-1021, 1022-1023, 1024-1025, 1026-1027, 1028-1029, 1030-1031, 1032-1033, 1034-1035, 1036-1037, 1038-1039, 1040-1041, 1042-1043, 1044-1045, 1046-1047, 1048-1049, 1050-1051, 1052-1053, 1054-1055, 1056-1057, 1058-1059, 1060-1061, 1062-1063, 1064-1065, 1066-1067, 1068-1069, 1070-1071, 1072-1073, 1074-1075, 1076-1077, 1078-1079, 1080-1081, 1082-1083, 1084-1085, 1086-1087, 1088-1089, 1090-1091, 1092-1093, 1094-1095, 1096-1097, 1098-1099, 1100-1101, 1102-1103, 1104-1105, 1106-1107, 1108-1109, 1110-1111, 1112-1113, 1114-1115, 1116-1117, 1118-1119, 1120-1121, 1122-1123, 1124-1125, 1126-1127, 1128-1129, 1130-1131, 1132-1133, 1134-1135, 1136-1137, 1138-1139, 1140-1141, 1142-1143, 1144-1145, 1146-1147, 1148-1149, 1150-1151, 1152-1153, 1154-1155, 1156-1157, 1158-1159, 1160-1161, 1162-1163, 1164-1165, 1166-1167, 1168-1169, 1170-1171, 1172-1173, 1174-1175, 1176-1177, 1178-1179, 1180-1181, 1182-1183, 1184-1185, 1186-1187, 1188-1189, 1190-1191, 1192-1193, 1194-1195, 1196-1197, 1198-1199, 1200-1201, 1202-1203, 1204-1205, 1206-1207, 1208-1209, 1210-1211, 1212-1213, 1214-1215, 1216-1217, 1218-1219, 1220-1221, 1222-1223, 1224-1225, 1226-1227, 1228-1229, 1230-1231, 1232-1233, 1234-1235, 1236-1237, 1238-1239, 1240-1241, 1242-1243, 1244-1245, 1246-1247, 1248-1249, 1250-1251, 1252-1253, 1254-1255, 1256-1257, 1258-1259, 1260-1261, 1262-1263, 1264-1265, 1266-1267, 1268-1269, 1270-1271, 1272-1273, 1274-1275, 1276-1277, 1278-1279, 1280-1281, 1282-1283, 1284-1285, 1286-1287, 1288-1289, 1290-1291, 1292-1293, 1294-1295, 1296-1297, 1298-1299, 1300-1301, 1302-1303, 1304-1305, 1306-1307, 1308-1309, 1310-1311, 1312-1313, 1314-1315, 1316-1317, 1318-1319, 1320-1321, 1322-1323, 1324-1325, 1326-1327, 1328-1329, 1330-1331, 1332-1333, 1334-1335, 1336-1337, 1338-1339, 1340-1341, 1342-1343, 1344-1345, 1346-1347, 1348-1349, 1350-1351, 1352-1353, 1354-1355, 1356-1357, 1358-1359, 1360-1361, 1362-1363, 1364-1365, 1366-1367, 1368-1369, 1370-1371, 1372-1373, 1374-1375, 1376-1377, 1378-1379, 1380-1381, 1382-1383, 1384-1385, 1386-1387, 1388-1389, 1390-1391, 1392-1393, 1394-1395, 1396-1397, 1398-1399, 1400-1401, 1402-1403, 1404-1405, 1406-1407, 1408-1409, 1410-1411, 1412-1413, 1414-1415, 1416-1417, 1418-1419, 1420-1421, 1422-1423, 1424-1425, 1426-1427, 1428-1429, 1430-1431, 1432-1433, 1434-1435, 1436-1437, 1438-1439, 1440-1441, 1442-1443, 1444-1445, 1446-1447, 1448-1449, 1450-1451, 1452-1453, 1454-1455, 1456-1457, 1458-1459, 1460-1461, 1462-1463, 1464-1465, 1466-1467, 1468-1469, 1470-1471, 1472-1473, 1474-1475, 1476-1477, 1478-1479, 1480-1481, 1482-1483, 1484-1485, 1486-1487, 1488-1489, 1490-1491, 1492-1493, 1494-1495, 1496-1497, 1498-1499, 1500-1501, 1502-1503, 1504-1505, 1506-1507, 1508-1509, 1510-1511, 1512-1513, 1514-1515, 1516-1517, 1518-1519, 1520-1521, 1522-1523, 1524-1525, 1526-1527, 1528-1529, 1530-1531, 1532-1533, 1534-1535, 1536-1537, 1538-1539, 1540-1541, 1542-1543, 1544-1545, 1546-1547, 1548-1549, 1550-1551, 1552-1553, 1554-1555, 1556-1557, 1558-1559, 1560-1561, 1562-1563, 1564-1565, 1566-1567, 1568-1569, 1570-1571, 1572-1573, 1574-1575, 1576-1577, 1578-1579, 1580-1581, 1582-1583, 1584-1585, 1586-1587, 1588-1589, 1590-1591, 1592-1593, 1594-1595, 1596-1597, 1598-1599, 1600-1601, 1602-1603, 1604-1605, 1606-1607, 1608-1609, 1610-1611, 1612-1613, 1614-1615, 1616-1617, 1618-1619, 1620-1621, 1622-1623, 1624-1625, 1626-1627, 1628-1629, 1630-1631, 1632-1633, 1634-1635, 1636-1637, 1638-1639, 1640-1641, 1642-1643, 1644-1645, 1646-1647, 1648-1649, 1650-1651, 1652-1653, 1654-1655, 1656-1657, 1658-1659, 1660-1661, 1662-1663, 1664-1665, 1666-1667, 1668-1669, 1670-1671, 1672-1673, 1674-1675, 1676-1677, 1678-1679, 1680-1681, 1682-1683, 1684-1685, 1686-1687, 1688-1689, 1690-1691, 1692-1693, 1694-1695, 1696-1697, 1698-1699, 1700-1701, 1702-1703, 1704-1705, 1706-1707, 1708-1709, 1710-1711, 1712-1713, 1714-1715, 1716-1717, 1718-1719, 1720-1721, 1722-1723, 1724-1725, 1726-1727, 1728-1729, 1730-1731, 1732-1733, 1734-1735, 1736-1737, 1738-1739, 1740-1741, 1742-1743, 1744-1745, 1746-1747, 1748-1749, 1750-1751, 1752-1753, 1754-1755, 1756-1757, 1758-1759, 1760-1761, 1762-1763, 1764-1765, 1766-1767, 1768-1769, 1770-1771, 1772-1773, 1774-1775, 1776-1777, 1778-1779, 1780-1781, 1782-1783, 1784-1785, 1786-1787, 1788-1789, 1790-1791, 1792-1793, 1794-1795, 1796-1797, 1798-1799, 1800-1801, 1802-1803, 1804-1805, 1806-1807, 1808-1809, 1810-1811, 1812-1813, 1814-1815, 1816-1817, 1818-1819, 1820-1821, 1822-1823, 1824-1825, 1826-1827, 1828-1829, 1830-1831, 1832-1833, 1834-1835, 1836-1837, 1838-1839, 1840-1841, 1842-1843, 1844-1845, 1846-1847, 1848-1849, 1850-1851, 1852-1853, 1854-1855, 1856-1857, 1858-1859, 1860-1861, 1862-1863, 1864-1865, 1866-1867, 1868-1869, 1870-1871, 1872-1873, 1874-1875, 1876-1877, 1878-1879, 1880-1881, 1882-1883, 1884-1885, 1886-1887, 1888-1889, 1890-1891, 1892-1893, 1894-1895, 1896-1897, 1898-1899, 1900-1901, 1902-1903, 1904-1905, 1906-1907, 1908-1909, 1910-1911, 1912-1913, 1914-1915, 1916-1917, 1918-1919, 1920-1921, 1922-1923, 1924-1925, 1926-1927, 1928-1929, 1930-1931, 1932-1933, 1934-1935, 1936-1937, 1938-1939, 1940-1941, 1942-1943, 1944-1945, 1946-1947, 1948-1949, 1950-1951, 1952-1953, 1954-1955, 1956-1957, 1958-1959, 1960-1961, 1962-1963, 1964-1965, 1966-1967, 1968-1969, 1970-1971, 1972-1973, 1974-1975, 1976-1977, 1978-1979, 1980-1981, 1982-1983, 1984-1985, 1986-1987, 1988-1989, 1990-1991, 1992-1993, 1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023, 2024-2025, 2026-2027, 2028-2029, 2030-2031, 2032-2033, 2034-2035, 2036-2037, 2038-2039, 2040-2041, 2042-2043, 2044-2045, 2046-2047, 2048-2049, 2050-2051, 2052-2053, 2054-2055, 2056-2057, 2058-2059, 2060-2061, 2062-2063, 2064-2065, 2066-2067, 2068-2069, 2070-2071, 2072-2073, 2074-2075, 2076-2077, 2078-2079, 2080-2081, 2082-2083, 2084-2085, 2086-2087, 2088-2089, 2090-2091, 2092-2093, 2094-2095, 2096-2097, 2098-2099, 2100-2101, 2102-2103, 2104-2105, 2106-2107, 2108-2109, 2110-2111, 2112-2113, 2114-2115, 2116-2117, 2118-2119, 2120-2121, 2122-2123, 2124-2125, 2126-2127, 2128-2129, 2130-2131, 2132-2133, 2134-2135, 2136-2137, 2138-2139, 2140-2141, 2142-2143, 2144-2145, 2146-2147, 2148-2149, 2150-2151, 2152-2153, 2154-2155, 2156-2157, 2158-2159, 2160-2161, 2162-2163, 2164-2165, 2166-2167, 2168-2169, 2170-2171, 2172-2173, 2174-2175, 2176-2177, 2178-2179, 2180-2181, 2182-2183, 2184-2185, 2186-2187, 2188-2189, 2190-2191, 2192-2193, 2194-2195, 2196-2197, 2198-2199, 2200-2201, 2202-2203, 2204-2205, 2206-2207, 2208-2209, 2210-2211, 2212-2213, 2214-2215, 2216-2217, 2218-2219, 2220-2221, 2222-2223, 2224-2225, 2226-2227, 2228-2229, 2230-2231, 2232-2233, 2234-2235, 2236-2237, 2238-2239, 2240-2241, 2242-2243, 2244-2245, 2246-2247, 2248-2249, 2250-2251, 2252-2253, 2254-2255, 2256-2257, 2258-2259, 2260-2261, 2262-2263, 2264-2265, 2266-2267, 2268-2269, 2270-2271, 2272-2273, 2274-2275, 2276-2277, 2278-2279, 2280-2281, 2282-2283, 2284-2285, 2286-2287, 2288-2289, 2290-2291, 2292-2293, 2294-2295, 2296-2297, 2298-2299, 2300-2301, 2302-2303, 2304-2305, 2306-2307, 2308-230

- GRIGORIAN, C. Beitrag zur Kenntniss der Luftathmungsorgane der Labyrinthici und der Ophiocephaliden (Vorläufige Mittheilung). Zool. Anz. xxiii, pp. 161-170, figg.
- GUITEL, F. Sur le rein du *Lepadogaster gouanii*. C.R. Ac. Sci. cxxx, pp. 1773-1777.
- GULLAND, G. L. The Anatomy of the Digestive Tract in the Salmon. J. Anat. Physiol. norm. path. (2) xv, pp. 114-116.
- HANITSCH, R. An Expedition to Mount Kina Balu, British North Borneo. J. Straits Asiat. Soc. xxxiv, pp. 49-88, 2 pls.
- HARMAN, N. B. The Palpebral and Oculomotor Apparatus of Fishes. Rep. Brit. Ass. 1899, pp. 780 & 781.
- HEINCKE, F. & EHRENBAUM, E. Eier und Larven von Fischen der deutschen Bucht. II. Die Bestimmung der schwimmenden Fischeier und die Methodik der Eimessungen. Wiss. Meeresuntersuch. (2) iii, pp. 127-332, figg., pls. ix & x.
- & HENKING, H. Die Heringsfischereien Norwegens. Abh. Deutsch. Seefisch.-Ver. vi, pp. 75-118, figg.
- HILTON, W. A. On the Intestine of *Amia calva*. Amer. Natural. xxxiv, pp. 717-727, figg.
- HOCHSTETTER, F. Ueber die Entstehung der Scheidewand zwischen Perikardial- und Peritonealhöhle und über die Bildung des Canalis pericardio-peritonealis bei Embryonen von *Acanthias vulgaris*. Morphol. Jahrb. xxix, pp. 141-168, figg., pl. vii.
- HOYER, H. Zur Morphologie des Fischherzens. Bull. Ac. Cracovie 1900, pp. 263-279, figg.
- HUENE, F. v. Devonische Fischreste aus der Eifel. N. Jahrb. Min. 1900, i, pp. 64-66, figg.
- JENKINS, J. T. The Distribution of Fish in and around Port Erin Bay during August and September 1899. P. Liverp. biol. Soc. xiv, pp. 99-102.
- . The Fish of Port Erin. Rep. Faun. Liverp. Bay v, pp. 291-294.
- JENSEN, A. S. Om Slimaalens Æg. Vid. Medd. 1900, pp. 1-13, pl. i.
- JORDAN, D. S. Notes on Recent Fish Literature. Amer. Natural. xxxiv, pp. 897-899.
- . The first Species named as the Type of the Genus. Science (2) xii, pp. 785-787.
- & EVERMANN, B. W. The Fishes of North and Middle America: A descriptive Catalogue of the Species of Fish-like Vertebrates found in the Waters of North America, North of the Isthmus of Panama. Part iv. Bull. U. S. Nat. Mus. No. 47, pp. 3137-3313, pls. i-cccxcii.
- & SNYDER, J. O. Notes on a Collection of Fishes from the Rivers of Mexico, with description of twenty new Species. Bull. U. S. Fish Comm. f. 1899, pp. 116-147, figg.
- & —. A list of Fishes collected in Japan by Keinosuke Otaki, and by the United States Steamer Albatross, with Descriptions of fourteen new Species. P. U. S. Mus. xxiii, pp. 335-380, pls. ix-xx.
- JOSEPH, H. Beiträge zur Histologie des *Amphioxus*. Arb. Inst. Wien xii, pp. 99-132, figg., 1 pl.

- JOUAN, H. Trois Poissons rares à Cherbourg. Mem. Soc. Cherbourg xxi, pp. 219-224.
- JUNGERSEN, H. F. E. Ueber die Urogenitalorgane von *Polypterus* und *Amia*. (Vorläufige Mittheilung.) Zool. Anz. xxi, pp. 328-334.
- KALBERLAH, F. Ueber das Rückenmark der Plagiostomen. Zeitschr. Naturw. lxxiii, pp. 1-40, fig., pl. i.
- KARPINSKY, A. Ueber die Reste von Edestiden und die neue Gattung *Helicoprion*. Verh. Russ. Min. Ges. St. Petersburg. (2) xxvi, 1899, pp. 361-476, figg., pls. i-iii.
- , On Remains of *Edestus* and on the genus *Helicoprion*. [Russian text.] Mem. Ac. St. Petersburg. viii, No. 7, 67 pp., figg., 4 pls.
- KERR, J. G. The External Features in the Development of *Lepidosiren paradoxa* Fitz. Phil. Trans. cxii, pp. 299-330, pls. viii-xii.
- , Note on Hypotheses as to the Origin of the Paired Limbs of Vertebrates. P. Cambridge Soc. x, pp. 227-235.
- , The Zoological Position of *Palaeospondylus* Traquair. T. c. pp. 296 & 299.
- KLUNZINGER, C. B. Ueber Zwergrassen bei Fischen und bei Felchen insbesondere. Jahresh. Ver. Württemb. lvi, pp. 519-532.
- KNIPOWITSCH, N. Einige Worte über das Vorkommen von *Lampris pelagicus* (Gunn.) an den nördlichen Küsten Russlands. Annuaire Mus. St. Petersburg. v, pp. 244 & 245.
- KOLOMBATOVIĆ, G. Druge Zoologiske Vijesti iz Dalmaciji. Spalato, 1900, 8vo, 34 pp.
- KYLE, H. M. On the Presence of Nasal Secretory Sacs and a Nasopharyngeal Communication in Teleostei, with especial reference to *Cynoglossus semilaevis* Gthr. J. Linn. Soc. xxvii, pp. 541-556, pl. xxxviii.
- , Contributions towards the Natural History of the Plaice (*P. platessus* L.). Rep. Fish. Board Scotland xviii, pp. 189-241, pls. ix & x.
- , The Classification of the Flat-Fishes (*Heterosomata*). T. c. pp. 335-369, pls. xi & xii.
- LAASKER, P. Die Entwicklung der Zahnleiste bei den Selachiern. (Vorläufige Mittheilung.) Anat. Anz. xvii, pp. 479-489, figg.
- LAMPERT, K. Ueber die Nahrung der Bachföselle und des Bachsaiblings. Allgem. Fischerei-Zeitung 1900, No. 15, 7 pp.
- LAUBE, G. C. Neue Schildkröten und Fische aus der böhmischen Braunkohlenformation. Abh. Ver. Lotos ii, pp. 37-56, pls. i-iv.
- LETACQ, A. L. Sur une Truite arc-en-ciel (*Salmo irideus* Gibb.) capturée dans la Thouanne, à Tanville (Orne). Bull. Soc. Rouen (4) xxv, pp. 145 & 146.
- LINSTOW, O. v. Die Fortpflanzungsgeschichte des Aals. Zeitschr. Naturw. lxxii, pp. 317-330, figg.
- LÖNNBERG, E. Contributions to the Ichthyology of the Caspian Sea. Bih. Svenska Ak. xvi, iv, No. 8, 38 pp.
- , *Lampris pelagicus* (Gunnerus) found at the Murman coast, an addition to the Russian Fauna. Annuaire Mus. St. Petersburg. v, pp. 242 & 243.

- LOOMIS, F. B. Die Anatomie und die Verwandtschaft der Ganoid- und Knochen-Fische aus der Kreide-Formation von Kansas, U. S. A. Palæontogr. xlv, pp. 213-284, figg., pls. xix-xxvii.
- LUCAS, F. A. A new Fossil Cyprinoid, *Leuciscus turneri*, from the Miocene of Nevada. P. U. S. Mus. xxiii, pp. 333 & 334.
- MACBRIDE, E. W. Further remarks on the Development of *Amphiasus*. Quart. J. Micr. Sci. xliii, pp. 351-366, pl. xvii.
- McINTOSH, W. C. On the Occurrence of the Grey Gurnard (*Trigla gurnardus* L.), and its Spawning in the Inshore and Offshore Waters. Rep. Brit. Ass. 1899, pp. 787 & 788.
- Sur la présence du Rouget gris (*Trigla gurnardus*) et sa ponte dans les eaux littorales et en haute mer. C.R. Ass. Franc. xxviii, ii, pp. 512-514. Also Bull. Soc. Centr. Aquicult. xii, pp. 101-108.
- MAILLARD, L. Un Poisson rare, la Loche d'étang (*Cobitis fossilis*), provenant d'une localité inédite. Bull. Soc. Nancy (3) i, pp. 176 & 177.
- MASSAT, E. Poissons fossiles des environs de Paris. Naturaliste xxii, pp. 264 & 265, figg.
- MEEK, S. E. The Genus *Eupomotia*. Field Mus. Zool. iii, No. 2, 6 pp.
- MORGAN, T. H. Regeneration in Teleosts. Arch. Entwicklmech. x, pp. 120-134, figg.
- NEUVILLE, H. Le Système sus-hépatique des Sélaciens. Bull. Soc. Philom. (9) ii, pp. 84-91.
- NIKOLSKI, A. M. Reptiles, Amphibians, and Fishes collected on the voyage of Mr N. A. Zaroudny to Persia in 1898. [Russian text.] Annuaire Mus. St. Petersburg. iv, pp. 375-417, pls. xx.
- A new *Discognathus* from Russia. [Russian text.] Op. cit. v, pp. 239-241.
- *Pseudoscaphirhynchus rossikowi*, n. gen. et spec. T. c. pp. 257-259.
- NUSBAUM, J. & SIDORIAK, S. Beiträge zur Kenntnis der Regenerationsvorgänge nach künstlichen Verletzungen bei älteren Bachforellen-embryonen (*Salmo furio* L.). Arch. Entwicklmech. x, pp. 645-684, pls. xiv-xvi.
- PARKER, G. H. Note on the Blood Vessels of the Heart in the Sunfish (*Orthogoriscus mola* Linn.). Anat. Anz. xvii, pp. 313-316, fig.
- PELLEGRIN, J. Les Poissons vénéneux. Paris, 1900, 8vo, 121 pp., figg.
- Note sur une anomalie des rayons épineux du *Proteracanthus sarissophorus* Cantor. Bull. Mus. Paris 1899, pp. 356 & 357.
- Révision des exemplaires du genre *Ctenopoma* de la collection du Muséum et description de trois espèces nouvelles. T. c. pp. 357-362.
- Description d'une espèce nouvelle du genre *Mormyrops*. T. c. pp. 362-364.
- Poissons nouveaux du Congo français. Op. cit. 1900, pp. 98-101.
- Radiographie appliquée à la détermination de momies de Poissons. T. c. pp. 175 & 176.
- Poissons nouveaux ou rares du Congo français. T. c. pp. 177-182.
- Cichlidés nouveaux de l'Afrique équatoriale. T. c. pp. 275-278.



[PELLEGRIN, J.] Les Nases dans le Bassin de la Loire. Bull. Soc. zool. France xxv, pp. 64 & 65.

— Sur une Raie monstrueuse de la famille des Cyclocéphaliens. T. c. pp. 106–108, fig.

PERRET, A. Les Dipnuestes. Rev. Scient. (4) xiii, pp. 786–788.

PIERS, H. Observations on a Fish (*Chylomycterus schoepfi*) new to the Fauna of Nova Scotia. P. Nova Scotian Inst. x, pp. 110 & 111.

POPTA, C. M. L. A new Species of *Arius*. Notes Leyden Mus. xxii, pp. 71–74.

— On a small *Monacanthus*. T. c. pp. 126–128, figg.

PRATHER, J. M. The early Stages in the development of the Hypophysis of *Amia calva*. Biol. Bull. i, pp. 57–80, pls. i–iii.

PUNNETT, R. C. On the Formation of the Pelvic Plexus, with especial reference to the Nervus Collector, in the Genus *Mustelus*. Phil. Trans. cxcii, pp. 331–352, pl. xiii. Abstract, P. R. Soc. London lxxv, pp. 445 & 446, and Zool. Anz. xxiii, pp. 14 & 15.

RAFFAELE, F. Per la genesi dei nervi da catene cellulari. Anat. Anz. xviii, pp. 337–344, figg.

\*RAVERET-WATTEL, C. Atlas de poche des poissons d'eau douce de la France, de la Suisse romande et de la Belgique, avec leur description, mœurs et organisation. Paris, 1900, 16mo, 167 pp., 64 pls.

RAWITZ, B. Ueber die Blutkörperchen einiger Fische. II. Ganoiden und Teleosteer. Arch. mikr. Anat. lvi, pp. 149–168, pl. vi.

REDEKE, H. C. Aanteekeningen over den Bouw van het Maag-darmslijmvlies der Selachiers. Tijdschr. Nederland. Dierk. Ver. (2) vi, pp. 284–303, pl. xii.

— Die sogenannte Bursa Entiana der Selachier. Anat. Anz. xvii, pp. 146–159, figg.

REIS, O. M. *Calacanthus lunsensis*, Teller. Jahrb. Geol. Reichsanst. l, pp. 187–192, pls. ix & x.

RIDEWOOD, W. G. On the relations of the Efferent Branchial Blood-vessels to the "Circulus Cephalicus" in Teleostean Fishes. P. Z. S. 1899, pp. 939–956, pls. lxiii–lxv.

\*RITTER, P. Beiträge zur Kenntniss der Stacheln von *Trygon* und *Acanthias*. Berlin, 1900, 8vo, 56 pp., 7 pls.

SAUVAGE, H. E. Les Poissons et les Reptiles du Jurassique supérieur de Fumel (Lot-et-Garonne). Bull. Soc. geol. France xxviii, pp. 496–499.

— Note sur les Poissons et les Reptiles du Jurassique inférieur du Département de l'Indre. T. c. pp. 500–504, pl. ix.

SCHACHMAGONOW, T. Ein eigenthümlicher Luftathmungsapparat bei *Betta pugnax*. Zool. Anz. xxiii, pp. 385–387, fig.

SCHUFELDT, R. W. Notes on the Psychology of Fishes. Amer. Natural. xxxiv, pp. 275–281, fig.

SCOTT, T. The Fishes of the Firth of Clyde. Rep. Fish. Board Scotland xviii, pp. 272–293.

SEGUEZZA, L. I Vertebrati fossili della Provincia di Messina. Parte prima. Pesci. Boll. Soc. geol. Ital. xix, pp. 443–518, pls. v & vi.

- SHAFFER, G. D. The Mosaic of the Single and Twin Cones in the Retina of *Micropterus salmoides*. Arch. Entwicklmech. x, pp. 685-691, pl. xvii.
- SIEBENROCK, F. Ueber einige fossile Fische aus Bosnien. Wiss. Mitt. Bosnien vii, pp. 683-694, pls. xii & xiii.
- SMITT, F. A. On the Genus *Lycodes*. Ann. Nat. Hist. (7) v, pp. 56-58.
- STEINDACHNER, F. Ueber das Vorkommen von *Gasterosteus platygaster*, Kessl., im Stromgebiete der Donau. SB. Ak. Wien cviii, i, pp. 539-542.
- STÉPHAN, P. Recherches histologiques sur la structure du tissu osseux des Poissons. Bull. Sci. France Belgique xxxiii, pp. 281-423, pls. i-viii.
- STIRTON, J. On the occurrence of the Fox-Shark in the Firth of Forth. Ann. Scott. Nat. Hist. 1900, pp. 17 & 18, fig.
- STUDNÍČKA, F. K. Zur Kenntniss der Parietalorgane und der sog. Paraphyse der niederen Wirbeltiere. Verh. Anat. Ges. 1900, pp. 44-52, figg.
- SUMNER, F. B. Kupffer's Vesicle and its relation to Gastrulation and Concrescence. Mem. N. York Ac. ii, pp. 47-83, figg.
- SURBECK, G. Ein Copulationsorgan bei *Cottus gobio* L. Zool. Anz. xxiii, pp. 229 & 230, and pp. 553-558.
- THURSTON, E. The Sea Fisheries of Malabar and South Canara. Bull. Mus. Madras iii, No. 2, 183 pp., 7 pls.
- TOMES, C. S. Upon the development of the Enamel in certain Osseous Fish. Phil. Trans. xciii, pp. 35-46, pl. v. Abstract, P. R. Soc. London lxxv, pp. 61-63.
- TRAQUAIR, R. H. Opening Address to the Section of Zoology, Bradford Meeting of the British Association. Nature lxxii, pp. 502-508.
- . On a new species of *Cephalaspis*, discovered by the Geological Survey of Scotland, in the Old Red Sandstone of Oban. Tr. R. Soc. Edinb. xxxix, pp. 591-593, pl. — (1899).
- . Notes on *Drepanaspis gmiidenensis*, Schlüter. Geol. Mag. (2) Dec. iv, vii, pp. 153-159, fig.
- . Ichthyological Notes. Ann. Scott. Nat. Hist. 1900, pp. 87-90, figg., pl. 1.
- TROIS, E. F. Sullo *Schedophilus botteri* dell' Heckel. Atti Ist. Veneto lix, p. 65.
- USSOW, S. Zur Anatomie und Entwicklungsgeschichte der Wirbelsäule der Teleostier. Bull. Soc. Moscou 1900, pp. 175-240, pls. i-iv.
- \*VACHAL, J. Tableau synoptique des genres et espèces de Poissons d'eau douce vivant en France. Clermont, 1900, 8vo, 24 pp.
- VAILLANT, L. Contribution à l'étude de la Faune ichthyologique de la Guyane française et du Contesté franco-brésilien. Arch. Mus. Paris (4) ii, pp. 123-135, pl. vii.
- VIEIRA, L. Catalogo dos Peixes de Portugal em Collecção no Museu de Zoologia da Universidade de Coimbra. Ann. Sci. Nat. Porto vi, pp. 152-165.

- WAITE, E. R. Additions to the Fish-fauna of Lord Howe Island. *Rec. Austral. Mus.* iii, pp. 193-209, figg., pls. xxxv & xxxvi.
- Notes on Fishes from Western Australia, and description of a new species. *T. c.* pp. 210-216, pl. xxxvii.
- WARPACHOWSKI, N. On the Ichthyological Fauna of the Obi River Basin. II. [Russian text.] *Annuaire Mus. St. Petersb.* iv, pp. 325-374, pls. xvii-xix (1900).
- The Fishes of Lake Teletski. [Russian text.] *Op. cit.* v, pp. 412-427, pl. xiii.
- WEINLAND, E. Ueber das Auftreten zweier verschiedener Verdauungs-secrete im Magen der Rochen. *SB. Ges. Munchen* xvi, pp. 27-32.
- WELLBURN, E. D. On the genus *Megalichthys* Agassiz: its History, Systematic Position, and Structure. *P. Yorksh. geol. Soc.* (2) xiv, pp. 52-71, pls. xiii-xix.
- On *Rhadinichthys monensis* Egerton, and its distribution in the Yorkshire Coalfield. *Geol. Mag.* (2) Dec. iv, vii, pp. 260-263, fig.
- WIEDERSHEIM, R. Brutpflege bei niederen Wirbelthieren. *Biol. Centrbl.* xx, pp. 304-316, 321-342, figg.
- WILLIAMSON, H. C. On the Mackerel of the East and West Coasts of Scotland. *Rep. Fish. Board Scotland* xviii, pp. 294-329, figg.
- WILLISTON, S. W. A new species of *Sagenodus* from the Kansas Coal Measures. *Kansas quart.* viii, pp. 175-181, pls. xxviii, xxxv-xxxvii.
- Some Fossil Teeth from the Kansas Cretaceous. *Op. cit.* ix, pp. 27-42, pls. vi-xiv.
- WOODWARD, A. S. Notes on Fossil Fish-remains collected in Spitzbergen by the Swedish Arctic Expedition, 1898. *Bih. Svenska Ak.* xxv, iv, No. 5, 7 pp., 1 pl.
- Evidence of an extinct Eel (*Urenchelys anglicus*, sp. n.) from the English Chalk. *Ann. Nat. Hist.* (7) v, pp. 321-323, pl. ix, fig. 1.
- On a new specimen of the Clupeoid fish *Aulolepis typus* from the English Chalk. *T. c.* pp. 324-326, pl. ix, fig. 2.
- On a new Ostracoderm (*Euphanerops longævus*) from the Upper Devonian of Scaumenac Bay, Province of Quebec, Canada. *T. c.* pp. 416-419, pl. x, fig. 1.
- On a new species of *Deltodus* from the Lower Carboniferous (Yoredale Rocks) of Yorkshire. *T. c.* pp. 419 & 420, pl. x, fig. 2.
- On some Fish-remains from the Parana Formation, Argentine Republic. *Op. cit.* vi, pp. 1-7, pl. i.
- YOUNG, R. T. & COLE, L. J. On the Nesting Habits of the Brook Lamprey (*Lampetra wilderi*). *Amer. Natural.* xxxiv, pp. 617-620.
- YUNG, E. & FUHRMANN, O. Recherches sur la digestion des Poissons (Histologie et physiologie de l'intestin). *Arch. Zool. exp.* (3) viii, pp. 333-351, pls. ix & x.
- ZSCHOKKE, F. Die Tierwelt der Hochgebirgsseen. *Denkschr. Schweiz. Ges.* xxxvii, 400 pp., 8 pls.

## II. GENERAL SUBJECT.

B. DEAN, Mem. N. York Ac. ii, p. 22, remarks on the primary groups of Fish-like vertebrates (*Chordata*). A new Class, *Arthrognathi*, is proposed to receive the *Arthrodira* of Smith Woodward and the *Anarthrodira*, a new sub-class for *Macropetalichthys*. The *Arthrognathi* are considered to be nearly related to the *Ostracophori* and widely remote from the *Dipnoi*.

J. GRAHAM KERR, P. Cambridge Soc. x, pp. 227-235, remarks on the hypotheses as to the origin of the paired limbs.

P. STÉPHAN, Bull. Sci. France Belgique xxxiii, pp. 281-423, pls. i-viii, studies the histological structure of the bony tissue of Fishes.

H. HOYER, Bull. Ac. Cracovie 1900, pp. 263-279, figg., has considerations on the morphology of the heart of Fishes.

B. RAWITZ, Arch. mikr. Anat. lvi, pp. 149-168, pl. vi, investigates the blood-corpuscles of Sturgeons and various Teleosteans.

H. B. HARMAN, Rep. Brit. Ass. 1899, pp. 780 & 781, remarks on the palpebral and oculomotor apparatus of Fishes.

C. H. EIGENMANN & G. D. SHAFER, Amer. Natural. xxxiv, pp. 109-118, figg., write on the retina of Fishes.

F. K. STUDNÍČKA, Verh. Anat. Ges. 1900, pp. 44-52, figg., has remarks on the parietal organs of the brain of Fishes.

CATOIS, C.R. Ass. Franc. xxviii, ii, pp. 515-519, gives a summary account of his histological researches on the olfactory and cerebellar ducts of Fishes.

E. BATAILLON, C.R. Ac. Sci. cxxx, pp. 115-118, writes on experimental parthenogenetic segmentation of Fish-ova.

J. T. CUNNINGHAM, Sexual Dimorphism, pp. 178-227, figg., deals with sexual dimorphism in Fishes.

R. WIEDERSHEIM, Biol. Centrbl. xx, pp. 333-342, figg., reviews our knowledge of the modes of nursing or protecting the offspring in the class Fishes.

J. PELLEGRIN brings out a work on poisonous Fishes: *Les Poissons Vénéneux*, Paris, 8vo, 121 pp., figg.—H. COUTIERE, Caus. Sci. Soc. Zool. France 1900, pp. 25-36, has an article on the same subject.

G. B. DE-TONI, Nuova Notarisia x, 1899, pp. 21-27, has general remarks on the food of Fishes, with references to the bibliography of the subject.

R. W. SHUFELDT, Amer. Natural. xxxiv, pp. 275-281, has notes on the psychology of Fishes.

L. EDINGER, Ber. Senckenberg. Ges. 1900, pp. cvii-cxvi, writes on the memory of Fishes.

C. CHUN's popular work "*Aus den Tiefen des Weltmeeres*" contains, pp. 505-537, remarks on and figures of deep-sea Fishes, provisionally identified, several of which prove to belong to new genera and species, which will be described by BRAUER.

D. S. JORDAN, Science (2) xii, p. 785 remarks on the effects of applying generic names according to the rule of regarding as the type the first species of a genus.

## III. FAUNÆ.

## EUROPE.

E. BADE brings out the three first fascicles of a book on the Freshwater Fishes of Central Europe (Berlin, 8vo), and C. RAVENET-WATTEL a pocket-atlas on the Freshwater Fishes of France, Belgium, and Switzerland.

1900. [VOL. XXXVII.]

C 10

*Scotland.* On the Fishes of the Firth of Clyde: T. SCOTT, Rep. Fish. Board Scotland xviii, pp. 272-293. W. E. CLARKE, Ann. Scott. Nat. Hist. 1900, pp. 8-17, 202-215, gives a list, with references, of the Fishes added to the fauna of the Firth of Forth and its tributaries since 1837.

*Isle of Man.* On the Fishes captured in and around Port Erin Bay: J. T. JENKINS, Rep. Faun. Liverp. Bay v, pp. 291-294, and P. Liverp. biol. Soc. xiv, pp. 99-102.

*Hampshire and Isle of Wight.* List of the Fishes by BOULENGER, Victoria History, Hampshire i, pp. 197-203.

*France.* Synoptic tables of the Freshwater Fishes by J. VACHAL (Clermont, 8vo, 24 pp.). A. ACLOQUE's Faune de France, small edition, last part, pp. 339-476, contains keys for the identification of the Fishes of France, with figures of the principal species.

*Germany.* L. BUXBAUM, Zool. Garten xli, pp. 55 & 56, 390-392, reports on the movements of the Main Fishes during the spring of 1899, and that of 1900.

*Switzerland.* F. ZSCHOKKE, Denk. Schweiz. Ges. xxxvii, pp. 264-270, remarks on the various species of Fishes occurring in lakes of the Alps at great altitudes.

*Portugal.* L. VIEIRA, Ann. Sci. Nat. Porto vi, pp. 152-165, continues his catalogue of the Portuguese Fishes preserved in the Museum of Coimbra University.

*Dalmatia.* Additions to the Fish-fauna by KOLOMBATOVIĆ, Druge Zool. Vj. Dalm. pp. 14-19.

*Russia.* List of the Freshwater Fishes, with their Russian names: E. BLANC, Ann. Sci. Nat. (8) xi, pp. 251-275. [This list is very incomplete.—REC.]

*Caspian Sea.* Contributions to the Ichthyology, by E. LÖNNBERG, Bih. Svenska Ak. xxvi, iv, No. 8, 38 pp.

## ASIA.

*Obi River.* N. WARPACHOWSKI, Annuaire Mus. St. Petersb. iv, pp. 325-374, pls. xvii-xix, brings out the second part of his Ichthyology of this Basin.

*Altai.* On the Fishes of Lake Teletzki: WARPACHOWSKI, Annuaire Mus. St. Petersb. v, pp. 412-427, pl. xiii.

*Lake Baikal.* On the Fishes: L. S. BERG, Annuaire Mus. St. Petersb. v, pp. 326-372, pl. viii.

*Persia.* On a collection of Fishes: NIKOLSKI, Annuaire Mus. St. Petersb. iv, pp. 407-417.

*Indian Seas.* A. ALCOCK continues his illustrations of Indian Deep-sea Fishes, Ill. Zool. R. Ind. Marine Survey S. Investigator, Fishes, Part vii, pls. xxvii-xxix.

*Southern India.* E. THURSTON, Bull. Mus. Madras iii, No. 2, deals with the sea fisheries of Malabar and South Canara.

*Japan.* On collections of Fishes: D. S. JORDAN & J. O. SNYDER, P. U. S. Mus. xxiii, pp. 335-380, pls. ix-xx.

*Hainan.* On some Fishes from the interior: BOULENGER, P. Z. S. 1899, pp. 959-962, pls. lxviii & lxix.

## AFRICA.

*Cape Verd.* J. CARDOSO, Ann. Sci. Nat. Porto vi, pp. 33-49, gives a list of the marine Fishes.

*Gambia.* List of the Fishes collected by Mr Budgett: BOULENGER, P. Z. S. 1900, pp. 511-516.

*Congo Basin.* The sixth part of BOULENGER's Poissons nouveaux du Congo concludes the first volume of the Ann. Mus. Congo, Zool. (pp. 129-164, pls. xlviii-lvi).

*French Congo.* On new or rare Fishes: PELLEGRIN, Bull. Mus. Paris 1900, pp. 98-101 and 177-182.

*L. Tanganyika.* Diagnoses of new Cyprinid and Silurid Fishes discovered by Mr J. E. S. Moore: BOULENGER, Ann. Nat. Hist. (7) vi, pp. 478-481.

## AMERICA.

JORDAN & EVERMANN's Fishes of North and Middle America are concluded by the issue of Part IV, containing Systematic Index, Addenda, and 392 plates.

*Canada.* On the freshwater Fishes of the Peninsula of Gaspé, and their distribution in the Maritime provinces: P. Cox, Tr. R. Soc. Canada (2) v, pp. 141-151.

*Lake Marinkuckee, Indiana.* Remarks on the Fish-fauna, from the point of view of the derivation of species: B. W. EVERMANN, Science (2) xi, pp. 450-454.

*Florida.* B. W. EVERMANN & W. C. KENDALL have compiled a Checklist of the Fishes. Rep. U. S. Fish. Comm. f. 1899, pp. 35-103.

*Bermudas.* Additions to the Fish-fauna, by S. GARMAN, Tr. Connect. Ac. x, pp. 510-512.

*Puerto Rico.* Descriptions of new genera and species by B. W. EVERMANN & M. C. MARSH, Rep. U. S. Fish. Comm. f. 1899, pp. 351-362.

*Mexico.* On a collection of Fishes from the rivers of Mexico: D. S. JORDAN & J. O. SNYDER, Bull. U. S. Fish Comm. f. 1899, pp. 116-147, figg.

*French Guiana.* On a collection of Fishes: L. VAILLANT, Arch. Mus. Paris (4) ii, pp. 123-135, pl. vii.

*Coast of Brazil.* On a collection of Fishes: C. H. GILBERT, P. Washington Ac. ii, pp. 161-184, pl. ix.

*Matto Grosso.* On the Fishes collected by Dr A. Borelli: BOULENGER, Boll. Mus. Torino xv, No. 370.

*Falkland Islands.* On a small collection of Fishes: BOULENGER, Ann. Nat. Hist. (7) vi, pp. 52-54.

## AUSTRALIA and SOUTH PACIFIC.

*Swan River.* On a collection of Fishes: WAITE, Rec. Austral. Mus. iii, pp. 210-216, pl. xxxvii.

*Lord Howe Island.* Additions to the Fish-fauna by E. R. WAITE, Rec. Austral. Mus. iii, pp. 193-209, figg., pls. xxxv & xxxvi.

*Sandwich Islands.* On collections of Fishes: H. W. FOWLER, P. Ac. Philad. 1900, pp. 493-519.

*Tahiti.* On collections of Fishes: H. W. FOWLER, P. Ac. Philad. 1900, pp. 519-524.

*Samoa.* On a small collection of Fishes: H. W. FOWLER, P. Ac. Philad. 1900, pp. 524-528.

## IV. PALÆONTOLOGY.

R. H. TRAQUAIR, in his opening address to the Section of Zoology at the Bradford Meeting of the British Association, reviews recent progress in the palæontology of Fishes. *Nature* lxii, pp. 502-508.

*Spitzbergen*. On the Fish-remains collected by the Swedish Arctic Expedition in 1898: A. S. WOODWARD, *Bih. Svenska Ak.* xxv, iv, No. 5, 7 pp., 1 pl.

*Devonian of Cornwall*. On some Fish-remains: H. Fox, *Geol. Mag.* (2) Dec. iv, vii, pp. 147-149, pl. vii.

*Paris*. E. MASSAT, *Naturaliste* xxii, pp. 264 & 265, figg., enumerates the principal fish-remains occurring in the vicinity of Paris.

*Jurassic of France*. On Fish-remains from Lot-et-Garonne and Indre: SAUVAGE, *Bull. Soc. geol. France* xxviii, pp. 496-501.

*Devonian of the Eifel district, Germany*. On some Fish-remains: F. v. HUENE, *N. Jahrb. Min.* 1900, i, pp. 64-66, figg.

*Miocene of Bohemia*. On some cyprinoid remains: LAUBE, *Abh. Ver. Lotos* ii, pp. 49-56, pls. iii & iv.

*Italy*. On the fossil Fishes of the Province Messina: I. SEGUENZA, *Boll. Soc. geol. Ital.* xix, pp. 443-518, pls. v & vi.

*Lower Tertiary of Bosnia*. On new Fishes: SIEBENROCK, *Wiss. Mitt. Bosnien* vii, pp. 683-694, pls. xii & xiii.

*Chalk of Kansas*. A Monograph of the Ganoid and Teleostean Fishes, by F. B. LOOMIS, *Palæontogr.* xlvii, pp. 213-284, figg., pls. xix-xxvii. On various Pycnodont and Selachian teeth: WITLSTON, *Kansas quart.* ix, pp. 27-42, pls. vi-xiv.

*Parana (Eocene?) Formation, Argentina*. On some Fish-remains: A. S. WOODWARD, *Ann. Nat. Hist.* (7) vi, pp. 1-7.

4

## V. REFERENCES ARRANGED SYSTEMATICALLY.

## TELEOSTOMI.

E. P. ALLIS, *Anat. Anz.* xviii, pp. 257-289, figg., has a paper dealing with the homologies of the maxillary bone in Crossopterygian and other Teleostome Fishes.

H. F. E. JUNGENSEN, *Zool. Anz.* xxiii, pp. 328-334, has a preliminary communication on the urogenital organs of *Polypterus* and *Amia*.

## TELEOSTEI.

S. USSOW, *Bull. Soc. Moscou* 1900, pp. 175-240, pls. i-iv, has a paper on the anatomy and development of the vertebral column of Teleosteans.

H. M. KYLE, *J. Linn. Soc.* xxvii, pp. 541-556, pl. xxxviii, writes on the presence of nasal secretory sacs and a naso-pharyngeal communication in Teleostei.

T. W. BRIDGE, *J. Linn. Soc.* xxvii, pp. 503-540, pls. xxxvi & xxxvii, writes on the air-bladder of *Notopterus* and its connection with the auditory organ.

E. YUNG & O. FUHRMANN, *Arch. Zool. exp.* (3) viii, pp. 333-351, pls. ix & x, have a contribution to the histology of the mucous membrane of the intestine in *Lota vulgaris*.

C. S. TOMES, *Phil. Trans.* cxliii, pp. 35-46, pl. v, has further observations on the development of the enamel in Teleosteans.

- W. G. RIDEWOOD, P. Z. S. 1899, pp. 939-956, pls. lxiii-lxv, has made a study of the relations of the efferent branchial blood-vessels to the circulus cephalicus in Teleostean Fishes.
- C. M. FÜRST, Anat. Anz. xviii, pp. 253-255, figg., remarks on ring-shaped formations in the ganglion-cells of Salmon-embryos.
- F. RAFFAELE, Anat. Anz. xviii, pp. 337-344, figg., has a note on the genesis of the lateral nerve in larvæ of *Lophius*.
- G. D. SCHAFER, Arch. Entwicklmech. x, pp. 685-691, pl. xvii, writes on some points in the structure of the retina of *Micropterus salmonoides*.
- C. H. EIGENMANN, P. Indiana Ac. 1899, pp. 31-46, figg., and Science (2) xi, pp. 492-503, figg., discusses degeneration in the eyes of the Fishes of the North American Caves.
- F. GOTCH, P. R. Inst. Brit. xvi, pp. 114 & 115, gives an abstract of a lecture on the electric organ of *Malopterurus*.
- J. T. CUNNINGHAM, P. Irish Ac. (3) v, pp. 752 & 753, remarks on the young stages of Teleosteans from the West Coast of Ireland.
- F. HEINCKE & E. EHRENBAUM, Wiss. Meeresuntersuch. (2) iii, pp. 127-332, figg., pls. ix & x, have a memoir on the eggs and larvæ of the Fishes of the Bay of Heligoland.
- W. GARSTANG, J. Mar. Biol. Ass. (2) vi, pp. 70-93, gives an account of preliminary experiments on the rearing of Sea-Fish larvæ.
- E. BATAILLON, C.R. Ass. Franc. xxviii, ii, pp. 529-533, writes on the blastoderm and the parablast of Teleosteans.
- F. B. SUMNER, Mem. N. York Ac. ii, pp. 47-83, figg., has a memoir on Kupffer's vesicle and its relation to gastrulation and concrescence in Teleosteans.
- J. NUSBAUM & S. SIDORIAK, Arch. Entwicklmech. x, pp. 645-684, pls. xiv-xvi, write on the regeneration of lost parts in advanced embryos of *Salmo fario*.
- T. H. MORGAN, Arch. Entwicklmech. x, pp. 120-134, figg., has made experiments on the regeneration of the fins of Teleosteans.
- C. B. KLUNZINGER, Jahresh. Ver. Württemb. lvi, pp. 519-532, remarks on nanism in Teleostean Fishes.

## ACANTHOPTERYGII.

## CENTRARCHIDÆ.

*Eupomotis*, Gill & Jord. Synopsis of the species by S. E. MEEK, Field Mus. Zool. iii, No. 2; *E. gibbosus*, C. & V. On its introduction in Switzerland: FOREL, Ann. Sci. Nat. (4) x, p. 76.

## PERCIDÆ.

- Lucioperca*, Cuv. On the Caspian species: LÖNNBERG, Bih. Svenska Ak. xvi, iv, No. 8, p. 4.
- Etheostoma aubeanaubi*, sp. n., EVERMANN, Rep. U. S. Fish. Comm. f. 1899, p. 367, pl. xvii, L. Maxinkuckee, Indiana.
- Hadropterus maxinkuckiensis*, sp. n., EVERMANN, t. c. p. 366, L. Maxinkuckee.

## SERRANIDÆ.

- Coreoperca*, Herz. Genus defined by BOULENGER, P. Z. S. 1899, p. 959; *C. whiteheadi*, sp. n., id. ibid. p. 960, pl. lxviii, Hainan.



- Lubrax longiceps*, p. 685, pl. xii, fig. 1, *bosniensis*, p. 687, pl. xii, fig. 2, and *steindachneri*, p. 689, pl. xiii, fig. 3, spp. nn. (foss.), SIEBENROCK, Wiss. Mitt. Bosnien vii, Lower Tertiary, Bosnia.
- Polyprion cernium*, C. & V. Remarks by JOUAN, Mem. Soc. Cherbourg xxxi, p. 219.
- Serranus gracilispinis*, sp. n. (foss.), SIEBENROCK, t. c. Lower Tertiary, Bosnia.
- Prionodes baldwini*, sp. n., EVERMANN & MARSH, Rep. U. S. Fish. Comm. f. 1899, p. 353, Puerto Rico.
- ✓ *Bryttosus*, g. n. for *Serranus kawamebari*, Temm. & Schleg.: JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 354, pl. xii.
- ✓ *Rhegma*, g. n., allied to *Rhypticus*, *Grammistes*, and *Gramma*. GILBERT, in JORDAN & EVERMANN, Fish N. Amer. p. 3169; *R. thaumasium*, sp. n., id. ibid. p. 3170, Panama.
- Lates niloticus*, L. On mummies from Upper Egypt: PELLEGRIN, Bull. Mus. Paris 1900, p. 175.
- Lutjanus apodus*, Walb. Note by GILBERT, P. Washington Ac. ii, p. 170.
- Apogon brasiliensis*, sp. n., GILBERT, P. Washington Ac. ii, p. 168, pl. ix, fig. 3, Coast of Brazil.
- ✓ *Eteliscus*, g. n. for *Etelis berycoides*, Hilgendorf: JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 355.

## PRISTIPOMATIDÆ.

- Synagrops philippinensis*, Gthr., figured by ALCOCK, Ill. Zool. Investig. pl. xxviii, fig. 1.
- Cænio axillaris*, sp. n., BOULENGER, Mar. Invest. S. Afr. No. 8, p. 10, pl. —, Cape of Good Hope.

## SQUAMIPINNES.

- Holacanthus conspicillatus* and *semicinctus*, spp. nn., WAITE, Rec. Austral. Mus. iii, pp. 203 & 204, pls. xxxv & xxxvi, Lord Howe Id.

## MULLIDÆ.

- Upeneus caninus*, sp. n., GILBERT, P. Washington Ac. ii, p. 165, pl. ix, fig. 2, Pernambuco.

## SPARIDÆ.

- Proteracanthus sarissophorus*, Cantor. On a specimen with anomalous second anal spine: PELLEGRIN, Bull. Mus. Paris 1899, p. 356.
- Calamus kendalli*, sp. n., EVERMANN & MARSH, Rep. U. S. Fish Comm. f. 1899, p. 354, Puerto Rico.

## HOPLOGNATHIDÆ.

- Hoplognathus woodwardi*, sp. n., WAITE, Rec. Austral. Mus. iii, p. 212, pl. xxxvii, Mouth of the Swan River.

## SCORPÆNIDÆ.

- Sebastopsis guamensis*, Q. & G., redescribed by H. W. FOWLER, P. Ac. Philad. 1900, p. 521.

- Sebastodes hakodatis* and *scythropus*, spp. nn., JORDAN & SNYDER, P. U. S. Mus. xxiii, pp. 361 & 363, pls. xiv & xv, Japan.  
*Scorpena onaria*, sp. n., JORDAN & SNYDER, t. c. p. 365, pl. xvi, Japan.  
*Caracanthus maculatus*, Gray, redescribed by H. W. FOWLER, t. c. p. 515.

## BERYCIDÆ.

- Bathylupea hoskynii*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxviii, fig. 2.

## SCIÆNIDÆ.

- Pseudotolithus mitsukurii*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 356, pl. xiii, Bay of Tokyo, Japan.  
 ✓ *Cilus*, g. n. [= *Sciæna*, Cuv.—REC.], DELFIN, Act. Soc. Chili x, p. 55; *C. montti*, sp. n., id. ibid., p. 56, fig., Coast of Chili.  
*Nebria microps*, C. & V. Note by VAILLANT, Arch. Mus. Paris (4) ii, p. 135.

## ACRONURIDÆ.

- ✓ *Acanthocaulus*, n. n. for *Prionurus*, Lacép. nec Ehrenb.: WAITE, Rec. Austral. Mus. iii, p. 206.

## TRICHIURIDÆ.

- Cimolichthys*, Leidy (foss.). American species monographed by LOOMIS, Palæontogr. xlvi, p. 267, pl. xxvii.

## CARANGIDÆ.

- Oligoplites saliens*, Bl. Note by GILBERT, P. Washington Ac. ii, p. 166.

## CORYPHÆNIDÆ.

- Lampris pelagicus*, Gunn. On its occurrence on the Murman coast: LÖNNBERG, Annuaire Mus. St. Petersb. v, p. 242; KNIPOWITSCH, t. c. p. 244.  
*Schedophilus botteri*, Heck. On the known specimens: E. F. TROIS, Atti Ist. Veneto lix, p. 65.

## SCOMBRIDÆ.

- Scomber scombrus*, L. On its variations on the coasts of Scotland: H. C. WILLIAMSON, Rep. Fish. Board Scotland xviii, p. 294, fig.  
*Thynnus alalunga*, Gm. Recorded from off the Orkneys by W. E. CLARKE, Ann. Scott. Nat. Hist. 1900, p. 248.  
*Luvarus imperialis*, Raf. On a specimen from the Adriatic: KOLOMBATOVIĆ, Druge Zool. Vij. Dalm. p. 14.

## TRACHINIDÆ.

- Notothenia porteri*, sp. n., DELFIN, Revist. chilena iii, 1899, p. 117, Chili.  
*Chiasmodes niger*, Johns., figured by ALCOCK, Ill. Zool. Investig. pl. xxviii, fig. 3.

- Champsodon vorax*, Gthr., figured by ALCOCK, l. c. fig. 5.  
*Bembrops caudimacula*, Sldr., figured by ALCOCK, op. cit. pl. xxxi, fig. 2.  
 ✓ *Cryodraco*, g. n., allied to *Pagetodes*, Richards.: DOLLO, Bull. Ac. Belgique 1900, p. 129, for *C. antarcticus*, sp. n., id. ibid. p. 130, Antarctic Ocean.  
 ✓ *Gerlachea*, g. n., allied to the preceding: DOLLO, t. c. p. 195, for *G. australis*, sp. n., id. ibid. p. 196, Antarctic Ocean.  
 ✓ *Racovitzia*, g. n., remarkable for the presence of an abdominal brood-pouch: DOLLO, t. c. p. 317, for *R. glacialis*, sp. n., id. ibid. p. 318, Antarctic Ocean.

## PEDICULATI.

- Lophius gracilimanus*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxix, fig. 3.  
*Onirodes niger*, Johns, figured by ALCOCK, t. c. pl. xxviii, fig. 4.  
*Cerantias bispinosus*, Gthr., figured by ALCOCK, op. cit. pl. xxxv, fig. 2.

## COTTIDÆ.

- G. SURBECK, Zool. Anz. xxiii, pp. 229 & 230, 553-558, describes a supposed copulatory organ in *Cottus gobio*.  
*Cottus bubalis*, L. On a specimen killed in its attempt to swallow a *Zoarces viviparus*: TRAQUAIR, Ann. Scott. Nat. Hist. 1900, p. 88; *C. comephoroides*, p. 338, pl. viii, fig. 3, and *nikolskii*, p. 346, pl. viii, figg. 1 & 2, spp. nn., L. S. BERG, Annuaire Mus. St. Petersb. v, L. Baikal.  
*Trigla gurnardus*, L. On its distribution and habits in the North Sea: W. C. MCINTOSH, C.R. Ass. Franc. xxviii, ii, p. 512, and Rep. Brit. Ass. 1899, p. 787.  
*Prionotus punctatus*, Bl. Note by GILBERT, P. Washington Ac. ii, p. 177.  
*Lepidotrigla longipinnis*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxxi, fig. 1.

## GOBIIDÆ.

- Gobius knerii*, Sldr. Note by KOLOMBATOVIĆ, Druge Zool. Vij. Dalm. p. 15; *G. steindachneri*, sp. n., id. ibid. p. 16, Dalmatia; *G. bayamonensis*, sp. n., EVERMANN & MARSH, Rep. U. S. Fish. Comm. f. 1899, p. 355, Puerto Rico.  
*Bollmannia boqueronensis*, sp. n., EVERMANN & MARSH, t. c. p. 356, Puerto Rico.  
*Microgobius meeki*, sp. n., EVERMANN & MARSH, t. c. p. 356, Puerto Rico.  
*Chaenogobius macrognathus*, Blkr. Note by JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 372.  
 ✓ *Trifasus*, g. n., allied to *Triænophorichthys*, for *T. ioturus*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 373, pl. xviii, Bay of Tokyo, Japan.  
*Crystalllogobius nilssonii*, Gill. On specimens from the Adriatic: KOLOMBATOVIĆ, Druge Zool. Vij. Dalm. p. 17.  
*Sicydium caguaitæ*, sp. n., EVERMANN & MARSH, Rep. U. S. Fish. Comm. f. 1899, p. 355, Puerto Rico.  
*Callionymus fuscatus*, C. & V. On a specimen from the Coast of Dalmatia: KOLOMBATOVIĆ, t. c. p. 18; *C. beniteguri*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 370, pl. xvii, Bay of Tokyo, Japan.

## BLENNIIDÆ.

- Blennius yatebei*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 374, pl. xix, Japan.
- ✓ *Brannerella*, g. n., closely allied to *Starksia*, Jord. & Everm., for *B. brasiliensis*, sp. n., GILBERT, P. Washington Ac. ii, p. 180, pl. ix, fig. 1, Coast of Brazil.
- <<✓✓ *Gillias*, g. n., near *Enneacanthus*, Jord. & Everm., for *G. jordani*, sp. n., EVERMANN & MARSH, Rep. U. S. Fish Comm. f. 1899, p. 357, Puerto Rico.
- Syacium micrurum*, Ranz. Note by GILBERT, P. Washington Ac. ii, p. 182.
- Mulacocentrus culebræ*, p. 357, *moorei*, p. 358, and *puertoricensis*, p. 358, spp. nn., EVERMANN & MARSH, Rep. U. S. Fish Comm. f. 1899, Puerto Rico.
- xxv<sup>1</sup> ✓ *Auchenistius*, g. n., near *Auchenopterus*, for *A. stahli*, sp. n., EVERMANN & MARSH, t. c. p. 359, Puerto Rico.
- Auchenopterus albicaudus*, p. 360, *rubescens*, p. 360, *cingulatus*, p. 361, and *fajardo*, p. 361, spp. nn., EVERMANN & MARSH, t. c., Puerto Rico.
- xxv<sup>1</sup> ✓ *Coralliozetes*, g. n., probably related to *Ophioblennius*, for *C. cardonæ*, sp. n., EVERMANN & MARSH, t. c. p. 362, Puerto Rico.
- Labrisomus nuchipinnis*, Q. & G. Note by GILBERT, P. Washington Ac. ii, p. 179.

## MUGILIDÆ.

- Mugil caldwelli*, sp. n., H. W. FOWLER, P. Ac. Philad. 1900, p. 524, pl. xix, fig. 4, Samoa.

## ATHERINIDÆ.

- Atherina mochon*, C. & V. Note by LÖNNBERG, Bih. Svenska Ak. xxvi, iv, No. 8, p. 8.
- Eslopsarum arge*, sp. n., JORDAN & SNYDER, Bull. U. S. Fish Comm. f. 1899, p. 133, fig., Rio Verde, near Aguas Calientes, Mexico.
- Chirostoma lucius* and *sphyræna*, spp. nn., BOULENGER, Ann. Nat. Hist. (7) v, pp. 54 & 55, L. Chapala, Mexico; *C. chapalæ*, p. 135, fig., *promelas*, p. 136, fig., *diæzi*, p. 137, fig. [= *lucius*, Blgr.], *crystallinum*, p. 139, fig., *ocotlane*, p. 140, fig., and *termæ*, p. 142, fig. [= *sphyræna*, Blgr.], spp. nn., JORDAN & SNYDER, t. c., L. de Chapala, Mexico.

## GASTROSTEIDÆ.

- Gastrosteus aculeatus*, L. A. GIARD, C.R. Soc. Biol. lii, p. 46, has made experiments on the rapid adaptation of this fish to fresh and salt water; *G. platygaster*, Kessl. On its occurrence in the Danube: STEINDACHNER, SB. Ak. Wien cviii, i, p. 539.

## OPHIOCEPHALIDÆ.

- Ophiocephalus gachua*, Ham. Buch. Recorded from the Bampur R., Persia, by NIKOLSKI, Annuaire Mus. St. Petersb. 1899, p. 407.

## GOBIESOCIDÆ.

- F. GUITEL, C.R. Ac. Sci. cxxx, pp. 1773-1777, writes on the kidneys of *Lepadogaster gouanii*.  
*Mirbelia gracilis*, Canestr. On a specimen from the Adriatic: KOLOMBATOVIĆ, Druge Zool. Vij. Dalm. p. 18.

## LABYRINTHICI.

- C. GRIGORIAN, Zool. Anz. xxiii, pp. 161-170, figg., investigates the structure of the so-called 'labyrinthic' accessory organ of respiration in the *Osphromenidae*, *Anabantidae*, and *Ophiocephalidae*, and T. SCHACHMAGONOW, t. c. pp. 385-387, figg., points out the relation between it and the air-bladder in *Betta pugnax*.  
*Ctenopoma*, Ptrs. On the specimens in the Paris Museum: PELLEGRIN, Bull. Mus. Paris 1899, pp. 357-364; *C. ocellatum* and *acutirostre*, pp. 359 & 360 [*Anabas weckii*, Blgr.—REC.], and *denticulatum*, p. 361, spp. nn., id. ibid. French Congo.

## LOPHOTIDÆ.

- Lophotes cepedianus*, Giorna. On a specimen from the Cape of Good Hope: BOULENGER, Mar. Invest. S. Afr., No. 3, p. 13, pl. —.

## NOTACANTHIDÆ.

- ✓ *Pronotacanthus*, g. n., for *Anguilla sahel-almæ*, J. W. Davis (foss.), A. S. WOODWARD, Ann. Nat. Hist. (7) v, p. 322.

*ACANTHOPTERYGII PHARYNGOGNATHI.*

## POMACENTRIDÆ.

- Eupomacentrus nigricans*, Lacép., redescribed by H. W. FOWLER, P. Ac. Philad. 1900, p. 503.  
*Glyphisodon limbatus*, C. & V., redescribed by H. W. FOWLER, t. c. p. 504.  
*Amphiprion latezonatus*, sp. n., WAITE, Rec. Austral. Mus. iii, p. 201, pl. xxxiv, Lord Howe Id.

## LABRIDÆ.

- Labrus maculatus*, Bl. and *melops*, L. Note by GARSTANG & BYRNE, J. Mar. Biol. Ass. (2) vi, p. 214.  
*Doratonotus decoris*, sp. n., EVERMANN & MARSH, Rep. U. S. Fish Comm. f. 1899, p. 354, Puerto Rico.  
*Sparisoma frondosum*, Cuv., redescribed by GILBERT, P. Washington Ac. ii, p. 174.  
*Anampses cuiveri*, Q. & G., redescribed by H. W. FOWLER, P. Ac. Philad. 1900, p. 506.  
*Hemipteronotus copei*, sp. n., H. W. FOWLER, t. c. p. 508, pl. xx, fig. 1, Sandwich Ids.  
*Coris aygula*, Lacép., redescribed by H. W. FOWLER, t. c. p. 510.  
*Iridio poeyi*, Stdr. (*kirschii*, Jord. & Everm.). Note by GILBERT, P. Washington Ac. ii, p. 173.

## CICHLIDÆ.

- Paratilapia multidentis*, sp. n., PELLEGRIN, Bull. Mus. Paris 1900, p. 98, French Congo.
- Pelmatochromis dimidiatus*, sp. n., PELLEGRIN, t. c. p. 99, Ubangi [= *Pseudoplesiops nudiceps*, Blgr., var.—REC.]; *P. lepidurus*, sp. n., PELLEGRIN, t. c. p. 275, Congo [= *P. lateralis*, Blgr.—REC.]; *P. polylepis*, sp. n., BOULENGER, Ann. Mus. Congo, Zool. i, p. 143, pl. lii, fig. 1, L. Tanganyika.
- Acara pallida*, Heck. Note by VAILLANT, Arch. Mus. Paris (4) ii, p. 134.
- Cichlasoma steindachneri*, sp. n., JORDAN & SNYDER, Bull. U.S. Fish Comm. f. 1899, p. 143, fig., R. Verde, near Rascon, Mexico.
- Heros itlanus*, sp. n., JORDAN & SNYDER, t. c. p. 144, fig., R. Ixtla, Mexico.
- Neotroplus carpintis*, sp. n., JORDAN & SNYDER, t. c. p. 146, fig., Laguna de Carpinte, Tamanlipas, Mexico.
- Tilapia bilineata*, p. 276, Congo, and *sexfasciata*, p. 277, Central Africa, spp. nn., PELLEGRIN, Bull. Mus. Paris 1900.
- Tropheus annectens*, sp. n., BOULENGER, t. c. p. 148, pl. lii, fig. 2, L. Tanganyika.
- ✓ *Spathodus*, g. n., allied to *Eretmodus*, Blgr., for *S. erythron*, sp. n., BOULENGER, t. c. p. 152, pl. lii, fig. 2, L. Tanganyika.
- Plecodus paradoxus*, Blgr., figured by BOULENGER, t. c. pl. lii, fig. 4.

## ANACANTHINI.

## LYCODIDÆ.

- Lycodes*, Reinh. Synopsis of the species, which are reduced to four: SMITT, Ann. Nat. Hist. (7) v, p. 56; *L. flavus*, sp. n., BOULENGER, op. cit. vi, p. 53, Falkland Ids.
- Brotula townsendi*, sp. n., H. W. FOWLER, P. Ac. Philad. 1900, p. 518, pl. xx, fig. 3, Sandwich Ids.

## GADIDÆ.

- Gadus esmarkii*, Nilss. On a specimen from the English Channel: GARSTANG, J. Mar. Biol. Ass. (2) vi, p. 274.
- Merluccius vulgaris*, Flem. On an albino: GARSTANG, t. c. p. 275.
- Raniceps trifurcatus*, Turt. On two specimens from off Berwick: G. BOLAM, Hist. Berwick Club xvii, p. 112.
- Bromophycis verrillii*, sp. n., S. GARMAN, Tr. Connect. Ac. x, p. 511, Bermudas.

## OPHIDIIDÆ.

- Neobythites pterotus*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxix, fig. 1.
- Saccogaster maculata*, Alcock, figured by ALCOCK, t. c. fig. 2.
- Fierusfer parvipinnis*, Kaup, redescribed and figured by H. W. FOWLER, P. Ac. Philad. 1900, p. 523, pl. xix, fig. 5.

## MACRURIDÆ.

- Macrurus polylepis*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxix, fig. 4; *M. lecointi*, sp. n., DOLLO, Bull. Mus. Belg. 1900, p. 222, Antarctic Ocean.

*Cælorhynchus kishinouyei*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 376, pl. xx, Japan.

- ✓ *Dolloa*, n. n. for *Moseleya*, Jord. nec Quelch. JORDAN, Amer. Natural. xxxiv, p. 897.

### PLEURONECTIDÆ.

H. M. KYLE, Rep. Fish. Board Scotland xviii, pp. 189-241, pls. ix & x, discusses the classification and geographical distribution of the Flat-Fishes.

H. M. KYLE, J. Linn. Soc. xxvii, pp. 541-556, pl. xxxviii, describes the nasal organ of *Cynoglossus semilavis*, Gthr.

*Hippoglossus vulgaris*, Flem. On specimens from Cherbourg: JOUAN, Mem. Soc. Cherbourg xxxi, p. 223.

*Verasper otakii*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 378, Tokyo, Japan.

*Pleuronectes platessa*, L. On growth and variations: H. M. KYLE, Rep. Fish. Board Scotland xviii, p. 189, pls. ix & x; *P. flesus*, L. On its variations: DUNCKER, Wiss. Meeresuntersuch. (2) iii, p. 333, figg., pls. xi-xiv, and Zool. Anz. xxiii, p. 141. Note on the habits: R. L. ASCROFT, P. Liverp. biol. Soc. xiv, p. 174. On a sinistral specimen: TRAQUAIR, Ann. Scott. Nat. Hist. 1900, p. 89, fig.

- ✓ *Kareius*, g. n., for *Liopsetta scutifer*, Stdr.: JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 379.
- ✓ *Usinostia*, g. n., for *Solea japonica*, Temm. & Schleg.: JORDAN & SNYDER, t. c. p. 380.
- ✓ *Zebrias*, g. n., for *Solea zebrina*, Temm. & Schleg.: JORDAN & SNYDER, l. c.
- ✓ *Areliscus*, g. n., for *Solea joyneri*, Gthr.: JORDAN & SNYDER, l. c.
- Synaptura marginata*, sp. n., BOULENGER, Mar. Invest. S. Afr. No. 8, p. 11, pl. —, Cape of Good Hope.

### PHYSOSTOMI.

#### SILURIDÆ.

*Clarias budgetti*, sp. n., BOULENGER, P. Z. S. 1900, p. 513, Gambia; *C. breviceps*, sp. n., id., Ann. Mus. Congo, Zool. i, p. 135, pl. xlviii, fig. 6, Mayombe, Congo.

*Eutropius grenfelli*, p. 137, pl. i, fig. 1, Congo, *debauwi*, p. 138, pl. i, fig. 2, Uerre, Congo, and *lemairii*, p. 138, pl. i, fig. 3, Katanga, spp. nn., BOULENGER, Ann. Mus. Congo, Zool. i.

*Amiurus prosthitiatus*, Cope. Note by H. W. FOWLER, P. Ac. Philad. 1900, p. 352.

- ✓ *Ictalurus*, g. n., allied to *Ictalurus*, for *I. balsanus*, sp. n., JORDAN & SNYDER, Bull. U. S. Fish Comm. f. 1899, p. 118, figg., R. Ixtla, Mexico.

*Chrysichthys myriodon*, sp. n., BOULENGER, Ann. Mus. Congo, Zool. i, p. 139, pl. li, L. Tanganyika; *C. brachynema*, sp. n., id., Ann. Nat. Hist. (7) vi, p. 480, L. Tanganyika.

*Gephyroglanis ogoensis*, sp. n., PELLEGRIN, Bull. Mus. Paris 1900, p. 180, Ogowé.

*Arius physacanthus*, Vaill., described and figured by VAILLANT, Arch. Mus. Paris (4) ii, p. 128, pl. vii, fig. 1; *A. bleekeri*, sp. n., POPTA, Notes Leyden Mus. xxii, p. 71, Malay Archipelago.

*Synodontis ocellifer*, sp. n., BOULENGER, P. Z. S. 1900, p. 514, Gambia; *S. granulosus*, sp. n., id., Ann. Nat. Hist. (7) vi, p. 480, L. Tanganyika.

- Chiloglanis*, Peters. Genus and type species characterized by BOULENGER, Ann. Nat. Hist. (7) vi, p. 521; *C. niloticus*, sp. n., id. ibid. p. 522, Arko, Soudan.
- ✓ *Euchilichthys*, g. n. for *Atopochilus guentheri*, Schilth., and *Chiloglanis dybowskii*, Vaill. BOULENGER, t. c. p. 523.
- Atopochilus*, Sauv. Genus and type species characterized by BOULENGER, t. c. p. 524.
- Mochocys*, Joannis (= *Rhinoglanis*, Gthr.). Genus and type species characterized by BOULENGER, t. c. p. 525.
- Doumea*, Sauv. Genus and type species characterized by BOULENGER, t. c. p. 526; *D. scaphyrhynchura*, Vaillant, described by PELLEGRIN, Bull. Mus. Paris 1900, p. 181.
- ✓ *Phractura*, n. n. for *Peltura*, Perugia nec M.-Edw.: BOULENGER, t. c. p. 527; *P. hovei*, Perugia, and *scaphyrhynchura*, Vaill., recharacterized, id. ibid. p. 528.
- ✓ *Andersonia*, g. n., allied to the preceding: BOULENGER, t. c. p. 528, for *A. leptura*, sp. n., id. ibid. p. 529, Koshek, Soudan.
- Plecostomus heylandi*, sp. n., BOULENGER, Ann. Nat. Hist. (7) v, p. 165, S. Paulo, Brazil.
- Loricaria latirostris* and *paulina*, spp. nn., BOULENGER, t. c. pp. 165 & 166, S. Paulo, Brazil.

## SCOPELIDÆ.

- Odontostomus atratus*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxxiii, fig. 3.
- Scopelus pyrsobolus*, Alcock, figured by ALCOCK, op. cit. pl. xxx, fig. 3.
- Harpodon squamosus*, Alcock, figured by ALCOCK, l. c. fig. 1.
- Bathypterois insularum*, Alcock, figured by ALCOCK, op. cit. pl. xxxii, fig. 1.
- Synodus sharpi*, sp. n., H. W. FOWLER, P. Ac. Philad. 1900, p. 497, pl. xix, fig. 2, Sandwich Ids.

## CYPRINIDÆ.

- V. GRATZIANOW, Zool. Anz. xxiii, pp. 66-73, figg., writes on the histological structure of the pharyngeal horny plate of Cyprinids.
- L. BLOCH, Jena. Zeitschr. xxxiv, pp. 1-57, figg., pls. i & ii, writes on the air-bladder and the Weberian ossicles of *Nemachilus barbatulus*.
- E. BATAILLON, C.R. Ass. Franc. xxviii, ii, pp. 533-537, has obtained early embryonic stages by crossing *Leuciscus phoxinus* with *Cyprinus auratus* and *Cobitis taenia*.
- Gymnostomus lepturus*, sp. n., BOULENGER, P. Z. S. 1899, p. 961, pl. lxix, fig. 1, Hainan.
- Aspiostoma zurudnyi*, Nik., is redescribed and referred to *Schizothorax* by NIKOLSKI, Annuaire Mus. St. Petersb. iv, p. 409.
- Discognathus lamti*, Ham. Buch., and *variabilis*, Heck. Notes on Persian specimens by NIKOLSKI, t. c. pp. 411 & 412; *D. rossicus*, sp. n., NIKOLSKI, op. cit. v, p. 239, Transcaspia and Persia.
- Chondrostoma nasus*, L. On its occurrence in the Loire: PELLEGRIN, Bull. Soc. zool. France xxv, p. 64.
- Capoëta amir*, Heck. (?). Note by NIKOLSKI, op. cit. v, p. 408; *C. tangunicæ*, sp. n., BOULENGER, Ann. Nat. Hist. (7) vi, p. 478, L. Tanganyika.
- Barbus bampurensis*, sp. n., NIKOLSKI, op. cit. iv, p. 410, Bampur R., Persia; *B. katangæ*, p. 132, pl. xlix, fig. 1, Katanga, and *trondolepis*, p. 133, pl. xlix, fig. 2, L. Tanganyika, spp. nn., BOUL



- Ann. Mus. Congo, Zool. i; *B. platyrhinus* and *serrifer*, spp. nn., BOULENGER, Ann. Nat. Hist. (7) vi, p. 479, L. Tanganyika; *B. analis*, sp. n., id. ibid., L. Kivu and Rusisi R.
- Gobio biwaæ* and *mayedæ*, spp. nn., JORDAN & SNYDER, P. U. S. Mus. xxiii, pp. 340 & 342, pl. ix, figg. 1 & 2, L. Biwa, Japan.
- Leuciscus idus*, L., *rutilus*, L., *virgo*, Heck., and *frisiæ*, Nordm. Notes on Caspian specimens: LÖNNBERG, Bih. Svenska Ak. xxvi, iv, No. 8, p. 11; *L. varillifer*, sp. n. (foss.), LAUBE, Abh. Ver. Lotos ii, p. 54, pl. iii, fig. 3, Brown Coal of Bohemia; *L. turneri*, sp. n. (foss.), LUCAS, P. U. S. Mus. xxiii, p. 333, Miocene of Nevada.
- Notropis rasconis*, p. 121, fig., R. Verde, nr. Rascon, Mexico, and *calientis*, p. 122, fig., R. Verde, Aguas Calientes, Mexico, spp. nn., JORDAN & SNYDER, Bull. U.S. Fish Comm. f. 1899.
- ✓ *Xystrosus*, g. n., allied to *Notropis*, for *X. popsche*, sp. n., JORDAN & SNYDER, t. c. p. 123, figg., Laguna de Chapala, Jalisco, Mexico.
- ✓ *Falcula*, g. n., also allied to *Notropis*, for *F. chapalæ*, sp. n., JORDAN & SNYDER, t. c. p. 124, fig., Laguna de Chapala.
- Tinca obtruncata*, sp. n. (foss.), LAUBE, Abh. Ver. Lotos ii, p. 49, pl. iii, fig. 1, Brown Coal of Bohemia.
- Acheilognathus steenackeri*, Sauv. = *A. rhombeum*, Temm. & Schleg., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 343.
- Abramis vimba*, L., *blicca*, Bl., *ballerus*, L., and *sopa*, Pall. Notes on Caspian specimens by LÖNNBERG, Bih. Svenska Ac. xxvi, iv, No. 8, p. 19.
- Alburnus chalcoides*, GÜLDENST. Note by LÖNNBERG, t. c. p. 17; *A. steindachneri*, sp. n. (foss.), LAUBE, Abh. Ver. Lotos ii, p. 51, pl. iii, fig. 2, Brown Coal of Bohemia.
- ✓ *Otakia*, g. n., probably related to *Pseudorasbora* and *Tribolodon*, for *O. rasborina*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 345, pl. ix, fig. 3, L. Biwa, Japan.
- ✓ *Ichikauia*, g. n., apparently related to *Xenocypris*, for *Opsariichthys steenackeri*, Sauv. JORDAN & SNYDER, t. c. p. 346, pl. x.
- Barilius hainanensis*, sp. n., BOULENGER, P. Z. S. 1899, p. 961, pl. lxix, fig. 2, Hainan; *B. weeksii* and *weynsii*, spp. nn., id. Ann. Mus. Congo, Zool. i, pp. 134 & 135, pl. xlvi, figg. 4 & 5, Upper Congo; *B. moorii*, and *tanganicæ*, spp. nn., id. Ann. Nat. Hist. (7) vi, p. 480, L. Tanganyika.
- ✓ *Leptocypris*, g. n., allied to *Barilius*, Ham. Buch. BOULENGER, Ann. Mus. Congo, Zool. i, p. 133, for *L. modestus*, sp. n., id. ibid. p. 134, pl. xlix, fig. 3, Upper Congo.
- Cobitis fossilis*, L. Recorded from the Moselle valley by L. MAILLARD, Bull. Soc. Nancy (3) i, p. 176. On a monstrous, gibbose specimen: A. GIARD, C.R. Soc. Biol. lii, p. 93.
- Nemachilus toni*, Dyb., figured by L. S. BERG, Annuaire Mus. St. Petersh. v, pl. viii, fig. 4.
- Glaniopsis hanitschi*, Blgr., figured by HANITSCH, J. Straits Asiat. Soc. xxxiv, pl. ii, fig. 2.

## CHARACINIDÆ.

- Anostomus borellii*, sp. n., BOULENGER, Boll. Mus. Torino xv, No. 370, p. 2, Matto Grosso, Brazil.
- Pyrhulina filamentosa*, C. & V., described and figured by VAILLANT, Arch. Mus. Paris (4) ii, p. 132, pl. vii, fig. 3.
- Tetragomopterus bahiensis*, Stdr. Note by GILBERT, P. Washington Ac. ii, p. 162; *T. callistus*, sp. n., BOULENGER, Boll. Mus. Torino xv, No. 370, p. 2, Matto Grosso, Brazil.

*Chirodon calliurus*, sp. n., BOULENGER, t. c. p. 3, Matto Grosso, Brazil.

*Bryconæthiops boulengeri*, sp. n., PELLEGRIN, Bull. Mus. Paris 1900, p. 101, Ogowe [= *B. microstoma*, Gthr.—REC.].

*Alestes lateralis*, sp. n., BOULENGER, Ann. Mus. Congo, Zool. i, p. 130, pl. xlviii, fig. 2, L. Dilolo, Katanga.

*Nannocharax elongatus*, sp. n., BOULENGER, t. c. p. 131, pl. xlviii, fig. 3, Upper Congo.

*Xenocharax crassus*, sp. n., PELLEGRIN, t. c. p. 100, French Congo.

✓ *Mesoborus*, g. n., allied to *Paraphago*, Blgr.; PELLEGRIN, t. c. p. 179; *M. crocodilus*, sp. n., id. ibid. p. 179, Diélé, French Congo.

## CYPRINODONTIDÆ.

*Characodon encaustus*, sp. n., JORDAN & SNYDER, Bull. U. S. Fish Comm. f. 1899, p. 126, fig., Laguna de Chapala, Jalisco, Mexico.

✓ *Xenodum*, g. n., allied to *Characodon*. JORDAN & SNYDER, t. c. p. 127; *X. caliente*, p. 127, fig., R. Verde, nr. Aguas Calientes, Mexico, and *xaliscone*, p. 128, fig., Laguna de Chapala, Jalisco, Mexico, spp. nn., JORDAN & SNYDER, t. c.

*Poecilia limantouri*, sp. n., JORDAN & SNYDER, t. c. p. 129, fig., Tampico, Tamaulipas, Mexico.

*Xiphophorus montezumæ*, sp. n., JORDAN & SNYDER, t. c. p. 131, fig., R. Verde, near Rascon, Mexico.

*Rivulus geayi*, Vaill., described and figured by VAILLANT, Arch. Mus. Paris (4) ii, p. 130, pl. vii, fig. 2.

## SCOMBRESOCIDÆ.

*Hemirhamphus depauperatus*, Lay & Benn., redescribed and figured by H. W. FOWLER, P. Ac. Philad. 1900, p. 499, pl. xix, fig. 3.

*Exocoetus doderleini*, Stdr. = *E. agoo*, Temm. & Schleg., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 351.

## MORMYRIDÆ.

*Mormyrops vaillanti*, sp. n., PELLEGRIN, Bull. Mus. Paris 1899, p. 362, Diélé, French Congo [= *M. nigricans*, Blgr.—REC.].

*Marcusenius cabræ*, sp. n., BOULENGER, Ann. Mus. Congo, Zool. i, p. 130, pl. xlviii, fig. 1, Mayombe, Congo.

## STERNOPTYCHIDÆ.

*Chauliodus pammelas*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxx, fig. 4.

## STOMIATIDÆ.

*Photostomius atrox*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxx, fig. 2.

## SALMONIDÆ.

G. E. H. BARRETT-HAMILTON remarks on the nuptial characters of certain Salmonids, as a means of explaining a possible mode of origin of some of the secondary sexual characters in Animals. P. Cambridge Soc. x, pp. 279-285.

- J. K. BARTON, J. Anat. Physiol. norm. path. (2) xiv, pp. 295-300, pls. xl-xliii, has made an examination of the digestive tract in *Salmo salar* with the result of disproving the existence of a desquamative catarrh of the mucous lining of the intestine which was supposed to take place in Salmon re-entering rivers.—Remarks by GULLAND, op. cit. xv, pp. 114-116.
- K. LAMPERT, Allgem. Fischerei-Zeitung 1900, No. 15, remarks on the food of Trout and Charr in Germany.
- Salmo salar caspius*, Kessl. Note by LÖNNBERG, Bih. Svenska Ak. xxvi, iv, No. 8, p. 25; *S. fario*, L. On deformed specimens: TRAQUAIR, Ann. Scott. Nat. Hist. 1900, p. 87, pl. i; *S. fluviatilis*, Pall., described by WARPACHOWSKI, Annuaire Mus. St. Petersb. iv, p. 370; *S. irideus*, Gibb. On its introduction in France: LETACQ, Bull. Soc. Rouen (4) xxxv, p. 145.
- Stenodus leucichthys*, GÜLDENST. Note by LÖNNBERG, t. c. p. 26; *S. nelma*, Pall., described by WARPACHOWSKI, Annuaire Mus. St. Petersb. iv, p. 329.
- Coregonus*, L. On dwarfed races of the European species: KLUNZINGER, Jahresh. Ver. Württemb. lvi, p. 527; *C. pelet*, Lep., p. 339, pl. xvii, figg. 1 & 2, *merkiti*, Gthr., p. 344, pl. xix, figg. 4 & 5, *tugun*, p. 350, pl. xix, fig. 3, *muksun*, Pall., p. 354, pl. xix, fig. 1, *polcur*, Pall., p. 360, pl. xviii, figg. 1 & 2, and *nasus*, Pall., p. 365, pl. xix, fig. 2, described and figured by WARPACHOWSKI, t. c.; *C. smilti*, sp. n., WARPACHOWSKI, Annuaire Mus. St. Petersb. v, p. 414, pl. xiii, fig. 1, L. Teletski, Altai; *C. mongolicus*, sp. n., id. ibid. p. 424, pl. xiii, fig. 2, Mongolia.
- Pachyrhizodus*, Dixon (foss.). American species monographed by LOOMIS, Palæontogr. xlv, p. 258; *P. curvatus*, sp. n., id. ibid. p. 265, pl. xxv, figg. 6-8, Chalk of Kansas.

## CLUPEIDÆ.

- Engraulis holodon*, sp. n., BOULENGER, Mar. Invest. S. Afr. No. 8, p. 12, pl. —, fig. 3, Cape of Good Hope.
- Stolephorus gilberti* and *garmani*, spp. nn., EVERMANN & MARSH, Rep. U. S. Fish Comm. f. 1899, p. 352, Puerto Rico; *S. purpureus*, sp. n., H. W. FOWLER, P. Ac. Philad. 1900, p. 497, pl. xix, fig. 1, Sandwich Ida.
- Lycengraulis grossidens*, Cuv. Note by GILBERT, P. Washington Ac. ii, p. 163.
- Clupea harengus*, L. Biological observations in Norway: HEINCKE & HENKING, Abh. Deutsch. Seefisch.-Ver. vi, p. 75; *C. sapidissima*, Wils. Note on the habits: R. L. ASCROFT, P. Liverp. biol. Soc. xiv, p. 173; *C. delicatula*, Nordm., *kessleri*, Grimm, and *saposchnikovi*, Grimm. Notes by LÖNNBERG, Bih. Svenska Ak. xxvi, iv, No. 8, p. 28.
- Aulolepis typus*, Ag. (foss.). Further notes by A. S. WOODWARD, Ann. Nat. Hist. (7) v, p. 324, pl. ix, fig. 2.
- Syntegmodus*, g. n., allied to *Albula*: LOOMIS, Palæontogr. xlv, p. 252, for *S. altus*, sp. n. (foss.), id. ibid. p. 253, pl. xxii, fig. 9, Chalk of Kansas.
- Osmeroides*, Ag. (foss.). Remarks by LOOMIS, t. c. p. 254.

## PLETHODIDÆ.

- Thryptodus*, g. n., allied to *Plethodus*, A. S. Woodw., LOOMIS, Palæontogr. xlv, p. 229; *P. zitteli* and *rotundus*, spp. nn. (foss.), id. ibid. pp. 234 & 235, pl. xxii, Chalk of Kansas.

- ✓ *Pseudothyrtodius*, g. n., also allied to *Plethodus*: LOOMIS, t. c. p. 225, for *P. intermedius*, sp. n. (foss.), id. ibid. p. 236, pl. xxii, figg. 3-8, Chalk of Kansas.

## CHIROCENTRIDÆ.

- Ichthyodectes*, Cope (foss.). Genus monographed by LOOMIS, Palæontogr. xlii, p. 236, figg., pl. xxiii.  
*Portheus*, Cope (foss.). Remarks by LOOMIS, t. c. p. 246.  
*Saurodon*, Hays (foss.). Remarks by LOOMIS, t. c. p. 247; *S. pygmaeus*, sp. n., id. ibid. p. 248, pl. xxiii, fig. 10, Chalk of Kansas.  
*Saurocephalus*, Harl. (foss.). Genus and species characterized by LOOMIS, t. c. p. 249, pl. xxv.

## ALEPOCEPHALIDÆ.

- Xenodermichthys guentheri*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxxii, fig. 2.  
*Alepocephalus edentulus*, Alcock, figured by ALCOCK, l. c. fig. 4.  
*Leptoderma affine*, Alcock, figured by ALCOCK, l. c. fig. 3.

## HALOSAURIDÆ.

- Halosaurus parvipinnis*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxxiii, fig. 1.  
*Halosaurichthys nigerrimus*, Alcock, figured by ALCOCK, l. c. fig. 2.

## NOTOPTERIDÆ.

- On the air-bladder: T. W. BRIDGE, J. Linn. Soc. xxvii, pp. 503-540, pls. xxxvi & xxxvii.

## MURÆNIDÆ.

- O. v. LINSTOW, Zeitschr. Naturw. lxxii, pp. 317-330, figg., summarises our knowledge of the reproduction of *Anguilla vulgaris*.  
*Conger vulgaris*, Cuv. On the development: EIGENMANN, Science (2) xii, p. 401.  
*Congrellus meeki*, sp. n., JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 347, pl. xi, Bay of Tokyo, Japan.  
*Lyodontis jordani*, sp. n., EVERMANN & MARSH, Rep. U. S. Fish. Comm. f. 1899, p. 352, Puerto Rica; *L. parvibranchialis*, sp. n., H. W. FOWLER, P. Ac. Philad. 1900, p. 494, pl. xviii, fig. 1, Sandwich Ids.  
*Echidna zonata*, sp. n., H. W. FOWLER, t. c. p. 495, pl. xviii, fig. 2, Sandwich Ids.  
*Aphthalmichthys caribbeus*, sp. n., GILL & H. M. SMITH, Science (2) xi, p. 974, Porto Rico.  
*Dysommopsis mucipara*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxxiv, fig. 1.  
*Saurenchelys tenuiola*, Alcock, figured by ALCOCK, l. c. fig. 2.  
✓ *Urenchelys*, g. n., for *Anguilla hakeiensis*, J. W. DAVIS (foss.), and *U. anglicus*, sp. n., from the Lower Chalk of Clayton, Sussex: A. S. WOODWARD, Ann. Nat. Hist. (7) v, p. 322, pl. ix, fig. 1.  
✓ *Megalopharynx*, g. n., allied to *Saccopharynx*, for a deep-sea fish from the Gulf of Guinea: BRAUER, in CHUN, Aus den Tiefen des Welt-  
p. 521, fig.

## LOPHOBRANCHII.

Remarks on the habits by G. DUNCKER, *Abh. Ver. Hamburg* xvi, No. 3, 12 pp.

*Syngnathus bucculentus*, Rathke. Note by LÖNNBERG, *Bih. Svenska Ak.* xxvi, iv, No. 8, p. 8.

*Hippocampus capensis*, sp. n., BOULENGER, *Mar. Invest. S. Afr.* No. 8, p. 11, pl. —, fig. 2, Cape of Good Hope; *H. jayakari*, sp. n., *id.* *Ann. Nat. Hist.* (7) vi, p. 51, fig., Muscat.

## PLECTOGNATHI.

*Halimochirurgus centriscoides*, Alcock, figured by ALCOCK, *Ill. Zool. Investig.* pl. xxxi, fig. 3.

*Monacanthus radiatus*, sp. n., POPTA, *Notes Leyden Mus.* xxiii, p. 126, figg., Malay Archipelago.

*Spheroides greeleyi*, sp. n., GILBERT, *P. Washington Ac.* ii, p. 176, pl. ix, fig. 4, Coast of Brazil.

*Chilomycterus schoepfi*, Walb. On a specimen from the coast of Nova Scotia: H. PIERS, *P. Nova Scotian Inst.* x, p. 110.

✓ *Euchilomycterus*, g. n., near *Chilomycterus*, for *E. quadraticatus*, sp. n., WATTE, *Rec. Austral. Mus.* iii, p. 208, Lord Howe Id.

*Orthogoriscus mola*, L. On the genital organs, and on the variations in the external characters: L. G. ANDERSSON, *Ofv. Ak. Forh.* 1900, p. 603; G. H. PARKER, *Anat. Anz.* xvii, pp. 313–316, fig., has a note on the blood vessels of the heart.

*Ranzania makuia*, Jenk. Note by H. W. FOWLER, *P. Ac. Philad.* 1900, p. 514.

## GANOIDEI.

W. A. HILTON, *Amer. Natural.* xxxiv, pp. 717–727, figg., describes the microscopical structure of the intestine of *Amia calva*.

E. P. ALLIS, *Zool. Jahrb. Anat.* xiv, pp. 107–134, pl. vi, writes on the pseudobranchial circulation in *Amia calva*.

J. M. PRATHER, *Biol. Bull.* i, pp. 57–80, pls. i–iii, writes on the early stages in the development of the hypophysis of *Amia calva*.

*Leptolepis nathorsti*, sp. n. (foss.), A. S. WOODWARD, *Bih. Svenska Ak.* xxv, iv, No. 5, p. 4, pl. —, figg. 2–11, Jurassic of Spitzbergen.

*Protosphyraena*, Leidy (foss.). Revision of the genus by LOOMIS, *Palæontogr.* xlvi, p. 215, figg., pls. xix & xx; *P. obliquidens* and *tenuis*, spp. nn., *id.* *ibid.* pp. 225 & 226, Chalk of Kansas.

*Coelodus stantoni*, sp. n. (foss.), WILLISTON, *Kansas quart.* ix, p. 28, pl. viii, fig. 6, Cretaceous of Kansas.

*Lepidosteus atrox*, Leidy (foss.). Note by EASTMAN, *Geol. Mag.* (2) Dec. iv, vii, p. 57; *L. atrox*, Leidy, and *simplex*, Leidy (foss.). On remains from the Green Shales of Wyoming: EASTMAN, *Bull. Mus. Harvard* xxxvi, p. 67, 2 pls.

*Acipenser gueldensædtti*, Brandt. On a specimen with abnormal caudal fin: STEINDACHNER, *SB. Ak. Wien* cviii, i, p. 542.

✓ *Pseudoscaphirhynchus*, g. n., for *Scaphirhynchus fedtschenkoi*, Kessl., NIKOLSKI, *Annuaire Mus. St. Petersb.* v, p. 257; *P. rossikowi*, sp. n., *id.* *ibid.* p. 258, Amu Darya.

*Rhadinichthys monensis*, Egert. (foss.). Note by WELLBURN, *Geol. Mag.* (2) Dec. iv, vii, p. 260, fig.

## CROSSOPTERYGII.

- E. P. ALLIS, Anat. Anz. xviii, pp. 257-289, figg., writes on the pre-maxillary and maxillary bones, and the supposed maxillary and mandibular breathing valves in *Polypterus bichir*, and op. cit. xvii, pp. 433-451, figg., on the lateral sensory canals of the same fish.
- J. S. BUDGETT, P. Z. S. 1900, pp. 430-433, gives an abstract of a paper on some points in the anatomy of *Polypterus*, dealing chiefly with the urogenital organs.
- Polypterus*, Geoffr. Notes on the habits of the two Gambian species, *P. lapradii*, Stdr., and *P. senegalus*, Cuv.: BUDGETT, P. Cambridge Soc. x, p. 236; *P. lapradii*, Stdr. On a half-grown specimen with large external gills: BOULENGER, P. Z. S. 1900, p. 267.
- Sagenodus*, Ow. (foss.). Remarks by WILLISTON, Kansas quart. viii, p. 175; *S. copeanus*, sp. n., id. ibid. p. 178, pls. xxviii, xxxv-xxxvii, Coal Measures of Kansas.
- Coelacanthus lunzensis*, Teller (foss.). Description and figure of various remains: O. M. REIS, Jahrb. geol. Reichsanst. l, p. 187, pls. ix & x.
- Megalichthys*, Ag. (foss.). On its history, systematic position, and structure: E. D. WELLBURN, P. Yorksh. geol. Soc. (2) xiv, pp. 52-71, pls. xiii-xix.
- Holoptychius monilifer*, sp. n. (foss.), A. S. WOODWARD, Bih. Svenska Ak. xxv, iv, No. 5, p. 3, pl. —, fig. 1, Upper Devonian of Spitzbergen.

## DIPNEUSTI.

- A. PERRET, Rev. Scient. (4) xiii, pp. 786-788, reviews our knowledge of the characters and habits of the existing Lung-fishes.
- J. G. KERR, Phil. Trans. cxcii, pp. 299-330, pls. viii-xii, describes the egg and development of *Lepidosiren paradoxa*.
- Lepidosiren paradoxa*, Fitz. On the abnormal character of reproduced limbs and tail: BRINDLEY, P. Cambridge Soc. x, p. 325.
- Protopterus annectens*, Ow. On the habits: BUDGETT, t. c. p. 239; *P. dolloi*, sp. n., BOULENGER, Ann. Mus. Congo, Zool. i, p. 155, pl. lvi, Congo.

## ARTHRODIRA.

- Rhynchodus emigratus*, sp. n., F. v. HUENE, N. Jahrb. Min. 1900, i, p. 65, fig., Devonian of Eifel district, Germany.

## OSTRACOPHORI.

- Cephalaspis lornensis*, sp. n., TRAQUAIR, Tr. R. Soc. Edinb. xxxix, p. 591, pl. —, Old Red Sandstone, Oban, Scotland.
- ✓ *Euphanerops*, g. n., allied to *Cephalaspis*, for *E. longævus*, sp. n., A. S. WOODWARD, Ann. Nat. Hist. (7) v, p. 416, pl. x, fig. 1, Upper Devonian of Scaumenac Bay, Canada.
- Drepanaspis gmuendenensis*, Schlüter. Notes by TRAQUAIR, Geol. Mag. (2) Dec. iv, vii, p. 153, figg., who refers it to the *Heterostraci*.

## HOLOCEPHALI.

- Chimæra phantasma*, sp. n., JORDAN & SNYDER, P. — p. 338, Japan.

## ELASMOBRANCHII.

- CAMPBELL BROWN, Palæontogr. xlii, p. 149, dealing with the structure of the Hybodont Sharks, remarks on their systematic position and on the supposed lines of evolution of the primitive Selachians.
- R. BURCKHARDT, Anat. Anz. xviii, pp. 488-492, figg., remarks on the characters of the Læmargidæ.
- H. C. REDEKE, Tijdschr. Nederland. Dierk. Ver. (2) vi, pp. 284-303, pl. xii, investigates the structure of mucous membrane of the stomach and intestine of Selachians.
- H. C. REDEKE, Anat. Anz. xvii, pp. 146-159, figg., remarks on the digestive tract of Selachians, with reference to the so-called 'Bursa Entiana.'
- R. C. PUNNETT, Phil. Trans. cxcii, pp. 331-352, pl. xiii, has investigated the formation of the pelvic plexus in *Mustelus*, with especial reference to the Nervus collector. Abstract, Zool. Anz. xxiii, pp. 14 & 15.
- R. BURCKHARDT, Ann. Nat. Hist. (7) vi, pp. 558-568, figg., writes on the luminous organs of the Selachians of the family *Spinacidae*.
- J. CRAWFORD, P. R. Soc. Edinb. xxiii, pp. 55-60, pl. —, writes on the histological structure and function of the rectal gland of Chondropterygians.
- J. BEARD, Anat. Anz. xviii, pp. 359-363, writes on a thymus element of the spiracle in *Raia*.
- H. NEUVILLE, Bull. Soc. Philom. (9) ii, pp. 84-91, writes on the supra-hepatic system of blood-vessels in Selachians.
- P. RITTER has remarks on the species of *Trygon* and *Acanthias* (Berlin, 8vo, 56 pp., 7 pls.).
- F. KALBERLAH, Zeitschr. Naturw. lxxiii, pp. 1-40, fig., pl. i, has a paper on the central nervous system of Selachians.
- G. V. CIACCIO, Mem. Acc. Bologna (5) vii, pp. 213-245, has made observations on the microscopical structure of the electric organ of Torpedos. French abstract, Arch. ital. Biol. xxxiii, pp. 51-72, 2 pls.
- S. GARTEN, Abh. Sachs. Ges. xxv, pp. 253-366, 4 pls., has a contribution to the physiology of the electric organ of *Torpedo*.
- S. GARTEN, Arch. Anat. 1900, pp. 133-154, pls. viii & ix, has made experiments on the changes in the ganglion-cells of the electric lobe of *Torpedo* after severance of the nerves arising from it.
- E. WEINLAND, SB. Ges. Munchen xvi, pp. 27-32, writes on the presence of two kinds of gastric juices in Skates of the genus *Raia*.
- J. EMMERT, Arch. mikr. Anat. lvi, pp. 459-490, figg., pl. xx, investigates the early development of *Torpedo marmorata*.
- F. HOCHSTETTER, Morphol. Jahrb. xxix, pp. 141-168, figg., pl. vii, writes on the development of the pericardial and peritoneal regions in *Acanthias vulgaris*.
- P. LAASER, Anat. Anz. xvii, pp. 479-489, figg., has a preliminary communication on the development of the teeth in Selachian embryos.
- J. BEARD, Anat. Anz. xviii, pp. 465-485, writes on the morphological continuity of the germ-cells in *Raia batia*.
- Carcharias glaucus*, L. On specimens from Cherbourg: JOUAN, Mem. Soc. Cherbourg xxxi, p. 222.
- Galeocerdo aduncus*, Ag. (foss.). Tooth figured by A. S. WOODWARD, Ann. Nat. Hist. (7) vi, pl. i, fig. 10.
- Hemipristis serra*, Ag. (foss.). Tooth figured by A. S. WOODWARD, t. c. pl. i, fig. 11.
- Corax curvata*, sp. n. (foss.), WILLISTON, Kansas quart. ix, p. 41, pl. xii, figg. 7 & 8, Cretaceous of Kansas.

- Carcharodon megalodon*, Ag. (foss.). Tooth figured by A. S. WOODWARD, Ann. Nat. Hist. (7) vi, pl. i, fig. 9.
- Odontaspis elegans*, Ag. (foss.). Teeth figured by A. S. WOODWARD, t. c. pl. i, figg. 1-5.
- Oxyrhina hastalis*, Ag. (foss.). Teeth figured by A. S. WOODWARD, t. c. figg. 6-8.
- Alopius vulpes*, Gm. On a specimen from the Firth of Forth: J. STIRTON, Ann. Scott. Nat. Hist. 1900, p. 17, fig.
- Scyllium quagga*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxvii, fig. 1; *S. rugosum*, *planidens*, and *gracilis*, spp. nn. (foss.), WILLISTON, Kansas quart. ix, p. 35, pl. vi, figg. 5-7, Cretaceous of Kansas.
- Hybodus fraasi*, sp. n., CAMPBELL BROWN, Palæontogr. xlv, p. 151, pl. xv, Upper Lias, Holzmaden, Württemberg; *H. lavalleyi*, sp. n. (foss.), SEGUEZA, Boll. Soc. geol. Ital. xix, p. 474, pl. v, fig. 33, Lias of Cape Castelluccio, Prov. Messina.
- Sphenodus robustidens* and *rectidens*, spp. nn. (foss.), SEGUEZA, t. c. pp. 477 & 478, pl. v, figg. 30 & 31, Lias of Cape Castelluccio, Prov. Messina.
- Deltodus croftoni*, sp. n. (foss.), A. S. WOODWARD, Ann. Nat. Hist. (7) v, p. 419, pl. x, fig. 2, Lower Carboniferous of Yorkshire.
- Centroscyllium ornatum*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxxv, fig. 1.
- Acanthias*, Risso. A. GRIFFINI, Rend. Acc. Scienze x, has made statistical investigations into the individual variations of young *A. vulgaris* and *blainvillii*.
- Raia asterias*, M. & H. On a monstrous specimen: PELLEGRIN, Bull. Soc. zool. France xxv, p. 106, fig.; *R. meerdervoorti*, Blkr., and *kenoiei*, M. & H., redescribed by JORDAN & SNYDER, P. U. S. Mus. xxiii, p. 337; *R. johannis-davisi*, Alcock, figured by ALCOCK, Ill. Zool. Investig. pl. xxvii, fig. 2.
- Ptychodus martini* and *anonymus*, spp. nn. (foss.), WILLISTON, Kansas quart. ix, p. 32, pls. x & xi, Cretaceous of Kansas.
- ✓ *Leptostyrax bicuspidatus*, g. and sp. nn., for Selachian teeth from the Cretaceous of Kansas: WILLISTON, t. c. p. 42, pl. vi, figg. 3 & 15, & viii, fig. 7.
- A. KARPINSKY, Verh. Russ. Min. Ges. St. Petersburg. (2) xxxvi, 1899, pp. 361-476, figg., pls. i-iii, discusses the nature of the remains known as *Edestidae* and reviews our knowledge of these ichthyodolites, a new form of which, from the Permo-carboniferous of the Gov. Perm., is described as *Helicoprion besonowi*, g. and sp. nn., and figured, pls. i-iv. Also Mem. Ac. St. Petersburg. viii, No. 7, pls. i-iv. Remarks by A. S. WOODWARD, Geol. Mag. vii, p. 36, EASTMAN, Amer. Natural. xxxiv, p. 579, fig., and T. FUCHS, SB. Ak. Wien cix, i, pp. 5-9, figg.

## CYCLOSTOMI.

- M. FÜRBRINGER, Morphol. Jahrb. xxviii, pp. 478-482, has further remarks on the systematic position of the *Myxini* for which he proposes a special division of the Craniota under the name of *Monosolenia* as opposed to *Disolenia* (*Petromyzontes*) and *Trisolenia* (*Gnathostomata*).
- W. H. GASKELL, J. Anat. Physiol. norm. path. (2) xiv, pp. 465-586, figg., pls. lvi & lvii, continues his study of *Ammocoetes* with reference to the origin of Vertebrates.
- C. W. GREENE, Amer. Journ. Physiol. iii, pp. 366-382, figg., deals with the anatomy and physiology of the caudal heart of *Bellostoma* (*Polistotrema*) *stouti*.
- E. GIACOMINI, Verh. Anat. Ges. 1900, pp. 44-52, f. pancreas of the *Petromyzontida*.



- E. BUFFA, Arch. ital. Biol. xxxiii, pp. 177-185, gives a digest of his experiments on the toxicity of the blood of *Petromyzon planeri*.
- B. DEAN, Mem. N. York Ac. ii, pp. 33-46, pl. ii, has a memoir on the egg of *Myxine glutinosa*.
- A. S. JENSEN, Vid. Medd. 1900, pp. 1-13, pl. i, describes and figures the egg of *Myxine glutinosa*.
- E. BATAILLON, C.R. Ac. Sci. cxxx, pp. 1201 & 1202, remarks on the formation of twin larvæ from the eggs of *Petromyzon planeri*.
- E. BATAILLON, t. c. pp. 1413-1415, has made experiments on the effect of certain solutions on the segmentation of Lamprey ova.
- Petromyzon planeri*, L. E. FESTA, Boll. Mus. Torino xv, No. 367, records a case of albinism (icterism); *P. wilderi*, Gage. On the nesting habits: R. T. YOUNG & L. J. COLE, Amer. Natural. xxxiv, p. 617.
- Palæospondylus*, Traq., is regarded by GRAHAM KERR, P. Cambridge Soc. x, p. 298, as possibly a young Dipnoan, or the young of some form closely allied to the Dipnoi.
- B. DEAN, Mem. N. York Ac. ii, p. 1, pl. i, has further notes on and figures of *Palæospondylus gunni*, Traq., and discusses the views which have been held by various authors as to its relationships.

## LEPTOCARDII.

- E. BURCHARDT, Jena. Zeitschr. xxxiv, pp. 719-832, pls. xviii-xxvi, has a paper on the structure of *Branchiostoma lanceolatum*, followed by a full bibliographical index to all publications on the subject.
- H. JOSEPH, Arb. Inst. Wien xii, pp. 99-132, figg., 1 pl., investigates some points in the histology of the Amphioxus.
- E. W. MACBRIDE, Quart. J. Micr. Sci. xliii, pp. 351-366, pl. xvii, has further remarks on the development of the Amphioxus.
- Branchiostoma belcheri*, Gray. Recorded from Singapore by F. P. BEDFORD, Nature lxi, p. 444.

## VI. TUNICATA.

BY

PROFESSOR W. A. HERDMAN, D.Sc., F.R.S.

---

### CONTENTS.

	Page
Introduction . . . . .	1
I. TITLES . . . . .	2
II. SUBJECT-INDEX . . . . .	3
A. Anatomy . . . . .	3
B. Embryology . . . . .	4
C. Geographical Distribution . . . . .	5
III. SYSTEMATIC . . . . .	5

---

### INTRODUCTION.

THE continuation of SEELIGER's section of "Bronn" is an important contribution to the literature of the Tunicata. DAMAS, WILLEY, and SELYS-LONGCHAMPS give us interesting studies of the development and growth in complication of the Ascidian's characteristic organ the branchial sac. HARTMEYER, MICHAELSEN, SLUITER, and RITTER have made important additions to our knowledge of speciology; while MERRILL's throw welcome light upon several vexed points in the

---

## I. TITLES.

1. CAULLERY, M. Sur les Clavelines nouvelles (*Synclavella*, n. g.) constituant des Cormus d'Ascidies composées. C.R. Ac. Sci. cxxx, pp. 1418-1420.
2. DAMAS, D. Étude du sac branchial chez *Ciona intestinalis* (L.). Arch. Biol. xvii, pp. 1-32, pls. i & ii.  
 —. [See also SELYS-LONGCHAMPS (18).]
3. DELLA VALLE, A. Intorno ai movimenti delle appendici ectodermiche del *Diplosoma listeri*. Rend. Acc. Napoli 1900, 2 pp.
4. —. Osservazioni intorno alle migrazioni delle colonie di *Diplosoma listeri*. Monit. Zool. ital. An. ii, Suppl. pp. 33 & 34.
5. HARTMEYER, R. Monascidien von Ternate. Abh. Senckenb. Ges. xxv, Heft 1, 12 pp., Taf. I.
6. —. Nachtrag zu Monascidien von Ternate. T. c. pp. 236-242, Taf. x.
7. HERDMAN, W. A. Observations on Compound Ascidians. In "Report of the Naples Zoological Station Committee." Rep. Brit. Ass. 1900, pp. 384-386.
8. —. The Pelagic Tunicata. In "Fauna of Valencia Harbour." P. R. Irish Acad. v, pp. 748-751.
9. KOROTNEFF, A. Zur Kenntniss der Embryologie der Pyrosomen. Biol. Centrbl. xx, pp. 793-799.
10. LOHMANN, H. Die Appendicularien. In Römer & Schaudinn's Fauna Arctica, Bd. I, Lief. 3: Gustav Fischer, Jena, 1900.
11. METCALF, M. M. Notes on the Morphology of Tunicata. Zool. Jahrb. Anat. xiii, pp. 495-602, pls. 34-40.
12. MICHAELSEN, W. Die Holosomen Ascidien des Magalhaensisch-süd-georgischen Gebietes. Zoologica, xii, Heft 31, pp. 1-148, pls. i-iii.
13. PIZON, A. Études biologiques sur les Tuniciers Coloniaux fixés, 2<sup>me</sup> partie. Bull. Soc. Ouest France x, Fasc. i-ii, pp. 1-72, pls. i & ii.
14. RANKIN, J. Preliminary Report on the Tunicata of Millport and neighbourhood. Comm. Millport Stat. i, pp. 43-53.
15. RITTER, W. E. Some Ascidians from Puget Sound, collections of 1896. Ann. N. York Ac. xii, No. 14, pp. 589-616, pls. xviii-xx.
16. SEELIGER, O. Tunicata (Mantelthiere). Bronn, Klassen und Ordnungen, Lief. 21-25, pp. 321-384, Taf. xix and xx.
17. —. Einige Bemerkungen über den Bau des Ruderschwanzes der Appendicularien. Zeitschr. wiss. Zool. lxvii, pp. 361-400, Taf. xxi-xxiii.

18. SELYS LONGCHAMPS, M. DE, & DAMAS, D. Recherches sur le développement post-embryonnaire et l'anatomie définitive de *Molgula ampul-loides*. Arch. Biol. xvii, pp. 385-488, pla. xiii-xv.
19. ——. Développement du cœur, du péricarde et des épicares chez *Ciona intestinalis* (communication préliminaire). Bull. Ac. Belgique, Juin 1900, No. 6, pp. 432-441.  
A preliminary notice of (18).
20. SLUITER, C. PH. Tunicaten aus dem Stillen Ocean. Zool. Jahrb. Syst. xiii, pp. 1-35, pla. i-vi.
21. TODARO, F. La moltiplicazione delle sfere di segmentazione dell' ovo nelle Salpe. Anat. Anz. xviii, Ergzshft. Verh. Anat. Ges. 14 Vers., pp. 194-202.
22. VERRILL, A. E. Additions to the Tunicata and Molluscoidea of the Bermudas. Tr. Connect. Ac. x, pp. 588-594.
23. WILLEY, A. On the Protostigmata of *Molgula manhattensis* (De Kay). Quart. J. Micr. Sci. xlv, No. 173, pp. 141-160, pl. 9.

## II. SUBJECT-INDEX.

### A. ANATOMY.

CAULLERY describes two species of Clavelinids from the Paris Museum which although presenting the structure of *Clavelina* have the whole body of the Ascidiocoids completely immersed in a massive common test. He places them in a new genus *Synclavella*, and cites them as an additional reason for abandoning Milne-Edwards' group the Social Ascidiarians.

SEELIGER (17) has some new observations on the structure of the tail in Appendicularians, and does not find that the segmentation of the nervous system completely corresponds with that of the muscle bands. He does not consider that there is true segmentation like that of *Amphioxus* nor that there is evidence for the view that Tunicata are derived from segmented ancestors. The connection with the Vertebrata must therefore, he argues, have been very far back.

DELLA VALLE (3) describes movements of contraction in the ampullæ of the ectodermal processes of *Diplosoma*.

MICHAELSEN now gives us a fuller account of the Ascidiarians from the Magellan Straits and South Georgia region he described briefly a few years ago. He also adds a few new species, breaks up several old species into varieties, or forms, and constitutes several new generic groups.

The last published section of SEELIGER's memoir on the Tunicata in "Bronn" deals with the branchial sac and its associated organs the endostyle, the dorsal lamina, the peripharyngeal bands, the dorsal tubercle, and the sense-organs.

HARTMEYER in describing one of his new Ascidiarians from Ternata discusses very fully the relations of the genera *Ascidia* and *Cora*? gives a classification of the family Ascidiidae.

MERCALF gives a very full description of *Ciona intestinalis* and associated parts of *Ciona intestinalis* compare with the gland he found is

of the neural gland is formed by the disintegration of cells proliferated from the endothelium of the gland. He demonstrates the innervation of the ciliated funnel by a large nerve from the ganglion in *Boltenia*. The function of the neural gland is regarded as quite unknown. *Octacnemus* he considers as belonging to the Clavelinidæ rather than the Salpidæ. He describes a new species of *Bostrichobranchus* and clears up some allied species of Molgulidæ. The abbreviated development of a *Molgula* is described leading to the suppression of the larval stage; and many other points in anatomy and histology are discussed.

PIZON deals with the history of the colony in the Botryllidæ and the Distomidæ, the formation of the oozoid and of blastozoids and their duration and retrogression, the mechanism of circulation and other points in connection with the colonial life.

## B. EMBRYOLOGY.

WILEY gives us some interesting observations on the development of the stigmata in the branchial sac of Ascidians. In *Clavelina* and other forms the stigmata arise each by separate perforations of the pharyngeal wall. In Ascidiidæ two pairs of primary stigmata are formed. These increase to six pairs which become subdivided to form the secondary and tertiary stigmata of the adult. *Botryllus* is intermediate in some respects. Willey describes the formation of the stigmata in *Molgula manhattensis* and compares it with the process described in other types. He comes to the conclusion that the formation of protostigmata by abstriction is probably primitive, but no longer occurs in *Botryllus*, while the subdivision of the protostigmata has dropped out of the ontogeny of *Clavelina*.

M. DE SELYS LONGCHAMPS and DAMAS in a detailed account of the post-embryonic development of *Molgula ampulloides* deal chiefly with the formation and modification of the protostigmata in the branchial sac, and with the development and structure of the gonad. They give a good account of the formation of the spiral stigmata and a full description of the adult branchial sac. They show the persistence in the adult of a larval sense organ, the pigmented otolith, in the hypophysial gland. The authors had a short preliminary communication under the same title in Bull. Ac. Belgique for June 1900.

DAMAS in his paper on *Ciona* gives us a careful study of the detailed arrangement of vessels of different sizes in the branchial sac, and of the distribution of the muscle bundles in the wall of the sac. He also deals with the development of the stigmata and other allied matters.

DE SELYS-LONGCHAMPS in his account of the development of the pericardium and heart and epicardium in *Ciona* establishes in the main the results of Willey and of Damas. The epicardium and the pericardium arise independently at very different periods in *Ciona*, unlike other forms that have been examined, and the rudiment of the pericardium is not formed by constriction from the bottom of the right procardium. In fact there is no procardium in *Ciona*, as according to this author the cardio-pericardiac complex is formed quite independently of the epicardia and at a much earlier stage in the life-history.

TODARO, dealing with the segmentation of the egg of *Salpa*, describes the remarkable relations between the nutrient (lecithin) cells and the true blastomeres and shows how the former nourish and support the latter for a long period before they become germ layers.

## C. GEOGRAPHICAL DISTRIBUTION.

LOHMANN gives an account of the Arctic species of Appendiculariidae in connection with the German North Polar Expedition of 1898. He discusses 4 species, *Fritillaria borealis*, *Oikopleura vanhoeffeni*, *O. labradoriensis* and *O. parva*.

SLUTTER describes a number of new species from the Pacific obtained in Schauinsland's expedition. Twenty-five out of the 36 species are new to science.

HERDMAN gives a list of 44 species of Tunicata which he identified at Naples in March and April 1900.

RITTER describes 15 species of Ascidians from Puget Sound, of which 7 are new to science.

HARTMEYER describes 5 species of simple Ascidians from Ternate of which 4 are new species and one a new genus and the type of a new subfamily the Corellascidiinae.

RANKIN enumerates 26 species of Tunicata found in the neighbourhood of Millport in the Clyde sea-area. Several of these are new to the locality and 3 are new to science.

## III. SYSTEMATIC.

## LARVACEA.

*Fritillaria gracilis*, RANKIN, p. 43, n. sp.

## ASCIDIACEA.

## CLAVELINIDÆ.

*Synclavella*, n. gen., CAULLERY, p. 1420, for *S. lessoni*, *australis*, n. spp.

## ASCIDIIDÆ.

*Corellascidiina*, nov. subfam., HARTMEYER, p. 241.

*Corellascidia*, n. gen., p. 235 for *C. herdmanni*, n. sp., p. 236, HARTMEYER.

## CYNTHIIDÆ.

*Cynthia superba*, p. 590, *deani*, p. 592, *macrosiphonus*, p. 597, *erecta*, p. 598, RITTER; *C. stubenrauchi*, p. 102, *pæssleri*, p. 106, MICHAELSEN : n. spp.

*Microcosmus ternatanus*, HARTMEYER, p. 4, n. sp.

## STYELIDÆ.

*Styela stimpsoni*, RITTER, p. 602; *S. depressa*, HARTMEYER, p. 94 : n. spp.

*Polycarpa aterrima*, n. sp., HARTMEYER, -

## POLYSTYELIDÆ.

*Allæocarpa*, n. gen., MICHAELSEN, p. 25.

*A. zschawi*, p. 32, *emilioni*, p. 35, *intermedia*, p. 39, *bridgesi*, p. 41,

MICHAELSEN, n. spp.

*Gynandrocarpa*, n. gen., MICHAELSEN, p. 29.

*Polyzoa gordiana*, p. 49, *falclandica*, p. 52, *lennoxensis*, p. 56, MICHAELSEN,  
n. spp.

## MOLGULIDÆ.

*Molgula kophameli*, p. 125, *pulchra*, p. 128, *georgiana*, p. 132, MICHAELSEN,  
n. spp.

*Paramolgula guttula*, p. 135, *patagonica*, p. 141, MICHAELSEN, n. spp.

*Bostrichobranchus molguloides*, n. sp., METCALF, p. 586.

## DISTOMIDÆ.

*Distoma molle*, p. 605, *lobata*, p. 606, RITTER, n. spp.

## POLYCLINIDÆ.

*Glossophorum variabile*, RANKIN, p. 50, n. sp.

*Psammaplidium molle*, RANKIN, p. 51, n. sp.

## VII. MOLLUSCA.

BY

E. R. SYKES, B.A., F.L.S.

Assisted by E. A. SMITH, F.Z.S., and G. C. CRICK, F.G.S.

### CONTENTS.

	Page		Page
Introduction . . . . .	1	Opisthobranchiata . . . . .	69
I. TITLES . . . . .	3	Nudibranchiata . . . . .	69
II. BIOLOGY.		Tectibranchiata . . . . .	69
Anatomy, Physiology, &c. . . . .	33	Nucleobranchiata . . . . .	70
Distribution.		Prosobranchiata . . . . .	71
Geographical.		Pectinibranchiata . . . . .	71
Non-Marine. . . . .	36	Scutibranchiata . . . . .	80
Marine . . . . .	43	Scaphopoda . . . . .	82
Geological . . . . .	47	Pelecypoda. . . . .	82
III. SYSTEMATIC.		Septibranchiata . . . . .	82
Cephalopoda . . . . .	52	Eulamellibranchiata . . . . .	83
Dibranchiata . . . . .	53	Pseudolamellibranchiata . . . . .	90
Ammonia . . . . .	53	Filibranchiata . . . . .	91
Tetrabranchiata . . . . .	56	Protobranchiata . . . . .	91
Gastropoda . . . . .	58	Amphineura . . . . .	92
Pulmonata . . . . .	59	Aplacophora . . . . .	92
Stylommatophora. . . . .	59	Polyplacophora . . . . .	92
Basommatophora . . . . .	68		

### INTRODUCTION.

THE stream of literature bearing on the Mollusca appears to have flowed as steadily during 1900 as in past years.

We have to chronicle two works dealing with the Mollusca in general, namely an English and revised edition of KORSCHÉLT & HEIDER'S (272) 'Text-book of Embryology,' and a new edition of LANG'S (275) 'Lehrbuch,' written by HESCHELER. TRYON'S Manual (529) has regularly appeared, PILSBRY having dealt with the Australasian *Bulimulidæ* and with *Amphidromus*, which he refers to the *Helicidæ*. Nine parts of the 'Conchylien-Cabinet' of MARTINI & CHEMNITZ (311) have been issued, relating to the *Eulimidæ*, *Buliminidæ*, *Auriculidæ*, and Zonitoid snails: they are of



somewhat unequal merit, and we note that CLESSIN has bestowed the same specific name on two apparently distinct species within seven pages. MARTENS (309) has now practically completed the molluscan portion of the 'Biologia Centrali-Americana' and has commenced some supplemental notes, rendered the more necessary by the fact that ten years have elapsed since the work was commenced. One part of the 'Atlas' of HIDALGO's (224) 'Obras Malacologicas'—illustrating Philippine Island landshells—has appeared. The further portion of DALL's (121) 'Tertiary Fauna of Florida' contains, as of old, a large amount of systematic detail which is of importance to students of recent molluscs; the present part deals with a portion of the Pelecypoda: here we may also note the further instalment of SACCO's (452) work on the tertiary fossils of Piedmont and Liguria. TAYLOR (521) has issued the completion of the first volume of his study of the British land and freshwater Mollusca; we trust the systematic portion will shortly appear.

Amongst the works relating to non-marine molluscs will be found a number of papers by GUDE (200, 201, 206) and PILSBRY (388, &c.) dealing with Japanese shells, as also minor writings by EHLMANN (163) and MOELLENDORFF (334) relating to the same fauna. The authors appear to have been engaged in describing collections formed by the same person with the result—as might be expected—that several species have received more than one name, and the future student of Japanese shells will have no light task before him. ANDREAE (12) and STURANY (506) have dealt with interesting collections from Central Asia. A number of forms from Indo-China have been described by BAVAY & DAUTZENBERG (31), the former (30) also pointing out a link between the faunas of North America and Asia. Several papers relating to Island faunas may be grouped together: MARTENS (305) on Sumatra; SMITH (481) on Christmas Island; DALL (124) on the Galapagos and Cocos Islands; PILSBRY (384) on the Bermudas; and SYKES (509) on the Hawaiian Islands. CORSI (105) has given a review of the fauna of Uruguay, and many brief papers on the North American fauna have appeared. Perhaps the most important of the systematic studies is that of SIMPSON (465) on the *Unionidae*, he having dealt with this exceedingly difficult family with painstaking care and skill; DROUET (157A), approaching the subject from a very different specific point of view, has recorded fifty-one species from the 'Basin of the Seine,' fortunately, however, only a few are described as new. An interesting discovery has been made by PILSBRY (399), who has described a new 'slug-like genus of dart-bearing *Helicide*' from Mexico, under the new generic name of *Metostracon*. Several other papers have been written on slugs, notably by BABOR (20, 21), COLLINGE (99–104), and SIMROTH (467); while PFEIFFER (380) has issued a study of *Triboniophorus*.

DYBOWSKI (160, 162) has written some papers relating to the fauna of Lake Baikal, perhaps the most interesting feature being the discovery in that lake of a species of *Ancylodoria*.

Several works by BERGH (38–41), relating to marine molluscs, may be grouped together, firstly a further fascicule of the 'Campagnes Scientifiques' dealing with Nudibranchs and *Marsenia*, secondly accounts of the Opisthobranchs of the Schauinsland Expedition and of the Nudibranchs of the Ingolf Expedition, thirdly a further portion of SEMPER's well-known 'Reisen.' DAUTZENBERG (135) has written an account of the molluscs collected during the cruise of the 'Chazalie' on both sides of the Atlantic. DALL (122, 123) has dealt with the *Cardiidae* and *Tellinidae* of North America; VERRILL (536), separately, and with BUSH (537), has added to our knowledge of the fauna of the Bermudas; CORSI (105) has catalogued the molluscs of Uruguay; and IHERING (239) has given a systematic account of the South American *Mytilidae*. GATLIFF and PRITCHARD, both separately and in conjunction (180, 181, 425–430) have worked on the fauna of Victoria and

several interesting notes on Australasian shells will be found in the writings of HEDLEY (218-220). We may also note the paper of MELVILL & STANDEN (330) relating to Franz Josef Land, the fauna of Oran by PALLARY (369), and NICHOLS' (352) list of the Irish Mollusca. A synopsis of the Egepsid Cephalopods has been written by PFEFFER (379), in which the new names somewhat outnumber the descriptions. *Bathysciadium* is an interesting new genus of Limpets, described by DAUTZENBERG & FISCHER (142), with a note on its anatomy by PELSENER (377).

Turning to the more strictly anatomical works we may first note a series of papers by CARAZZI (79-82), GEORGEVITCH (184), and MAZZARELLI (320-323) dealing with the embryology of *Aplysia*; while BOTTAZZI & ENRIQUES (61) have examined the nervous system of *Aplysia* and some Cephalopods. The development of the last named and *Planorbis* has been, respectively, studied by FAUSSEK (167) and HOLMES (234). LINVILLE (280) has written on the maturation and fertilization of Gastropods, CAMUS (75, 76) on the blood of snails, and TAUBER (517) on the morphology of the Stylommatophora. A detailed account of the anatomy of some Asiatic Helicoids has been given by WIEGMANN (559). HESSE (223) has written on the eyes of Molluscs, DREW (155-157) has dealt with the anatomy of *Yoldia* and issued some notes on locomotion in *Solenomya* and its allies, GUIART (207) has put forward a classification of the Opisthobranchs, while the growth and development of the shell have attracted STEMPPEL (500).

The Recorders have been considering the best means of breaking up the somewhat lengthy paragraphs which now appear under the heading 'Geological,' so that students might more speedily and easily find that which they desire: tentatively the first large group of 'Tertiary' has been divided geographically by continents, and criticisms or suggestions would be welcomed.

Inasmuch as an index-volume to the 'Record' is in preparation, the present opportunity has been taken to include as many genera and sections, omitted in past years, as the Recorders are aware of, but no such names issued prior to Scudder's 'Nomenclator' have been here given. In the course of this work a few papers—now given in a supplemental list of titles—and certain systematic details were detected, which appear to have previously escaped the notice of Recorders. Students are warned that any reference to a title numbered from 576 to 588, relates to the publications of past years; where such systematic details are now given, the references have the year in which the omission occurred added in square brackets.

In conclusion the Recorders desire to repeat their protest against the practice of issuing new genera and species without any distinguishing mark, or with only an inadequate one (such as "mihi"); while authors persist in this course errors and omissions are bound to exist in nearly every volume of the 'Zoological Record.'

## I. TITLES.\*

1. ABEL, O. Die Fauna der miocänen Schotter von Niederschleinz bei Limberg-Meissau in Niederösterreich. Verh. geol. Reichsanst. 1900, pp. 387-394.
2. ADAMS, C. C. Variation in *Io*. P. Amer. Ass. xlix, pp. 208-226, pls. i-xxvii.

---

\* An asterisk prefixed to a title indicates that the Recorders the paper in question.

3. ADAMS, L. E. Observations on some British land and freshwater shells. J. Conch. ix, pp. 297-302, figg.  
— [See also WOODWARD & ADAMS (569).]
4. AHTING, K. Ueber die Entwicklung des Bojanus'schen Organs und des Herzens von *Mytilus edulis* Linn. Zool. Anz. xxiii, pp. 529-532.
5. ALLEN, E. J. & TODD, E. A. The fauna of the Salcombe Estuary. J. Mar. Biol. Ass. vi, pp. 151-217.
6. ANCEY, C. F. Description d'un nouveau *Clavator* du Sud de Madagascar. J. Conchyl. xlviii, pp. 12 & 13, pl. i, pars.
7. —. Mollusques de l'Archipel de Bonin. T. c. pp. 423-428.
8. —. Description of a land shell [*Eurytus couturesi*] from South America. Nautilus xiv, p. 42.
9. —. Descriptions of new Asiatic species [landshells from Arabia]. T. c. pp. 42 & 43.
10. —. Description of new species of Asiatic [non-marine] shells. T. c. pp. 83 & 84.
11. ANDRÉ, E. Organes de défense tégumentaires des *Hyalinia*. Rev. Suisse Zool. viii, pp. 425-433, pl. xxxii.
12. ANDREAE, A. Landschnecken aus Central- und Ostasien. I. Gliederung der Gattung *Cathaica*. II. Convergenzerscheinungen asiatischer Eulotiden und europäischer Heliciden verschiedener Genera. III. Werdende Arten im Formenkreise der *Campylocathaica przewalskii* (v. Mart.). Anhang: Die Variationsreihe der *Campylaea frigida* Jan. IV. Kurzer Vergleich der chinesischen und der europäischen Landschneckenfauna des Löss. Mt. Mus. Hildesheim xii, 14 pp., 1 pl.
13. [ANON.] The corrosion of shells in cabinets. Nautilus xiii, pp. 122-127.  
Abstracted from paper by BYNE. [Cf. Zool. Rec. xxxvi, No. 68.]
14. —. Collection of pearls and the shells in which they are found in the Brooks, Rivers, Lakes and on Coasts of the United States. U.S. Section, Paris Exhibition, 1900, 16 pp.
15. —. J. B. Quintard [obituary]. Nautilus xiv, p. 8.
16. \*APOSTOLIDES, N. C., BOUTAN, C., BRUMPT, E., CUENOT, L., ETC. Zoologie descriptive des Invertébrés, Anatomie, Histologie et Dissection des formes typiques d'invertébrés. Paris, 2 vols., 627 & 628 pp., 608 figg., 148 cold., 1899.
17. ARMITAGE, E. Rearing snails in captivity. Sci. Gossip vi, pp. 323 & 324.
18. ASHEY, E. Definitions of two new species of South Australian Polyplacophora. Tr. R. Soc. S. Austral. xxiv, pp. 86-88, pl. i, pars.
19. ATHANASIU, S. Ueber eine Eocänfauna aus der nordmoldauischen Flyschzone. Verh. geol. Reichsanst. 1899, pp. 256-267.
20. BABOR, J. F. Über die Nacktschnecken der Grazer Umgegend. Verh. Deutsch. zool. Ges. x, pp. 148-150.
21. —. Mittheilungen über Nacktschnecken in der Sammlung des K.K. naturhistorischen Hofmuseums. 1. Ueber eine neue Arionidenform aus Nordamerika (*Ariolimax steindachneri*, n. sp.). 2. Erste vorläufige Mittheilung zu einer Monographie der Gattung *Atopos* Simroth. Ann. Hofmus. Wien xv, pp. 95-102.

22. BAKER, F. C. On a collection of freshwater shells from Rhode Island. *Nautilus* xiii, pp. 112 & 113.
23. —. A revision of the *Physæ* of North-eastern Illinois. *Op. cit.* xiv, pp. 16-24, figg.
24. —. Shell collecting near Rochester, N.Y. *T. c.* pp. 69-71.
25. BARROIS, C. Note sur l'Étage à *Anarcestes lateseptatus* dans l'Ille-et-Vilaine. *Ann. Soc. geol. Nord* xxviii, pp. 116 & 117.
26. BAUER, K. Zur Conchylienfauna des Florianer Tegels. *Mt. Ver. Steiermark* xxxvi, pp. 19-47, 2 pls.
27. BAUMBERGER, E. Vorläufige Mitteilungen über die Ammonitenfauna des Valangien und Hauterivien im Schweizerjura. *Eclog. geol. Helvet.* vi, pp. 159-161.
28. — & MOULIN, H. La série Néocomienne à Valangin. *Bull. Soc. Neuchâtel* xxvi, pp. 150-210.
29. BAYERN, THERESE, PRINCESS OF. Im Jahre 1898 auf einer Reise in Südamerika gesammelte Mollusken. *Nachrb. Deutsch. malak. Ges.* 1900, pp. 49-58, pl. 1.  
With diagnosis of *Pisidium boliviense*, n. sp., by STURANY.
30. BAVAY, A. Sur deux Mollusques établissant un lien nouveau entre la faune Américaine et la faune Chinoise. *Bull. Soc. zool. France* xxiv, pp. 212 & 213.
31. — & DAUTZENBERG, P. Descriptions de coquilles nouvelles de l'Indo-Chine. *J. Conchyl.* xlviii, pp. 108-122, 435-460, pls. ix-xi.
32. BEARD, J. Principles of animal development. i. A whelk's egg. *Nat. Sci.* xiv, pp. 131-137 [1899].
33. BEAUMONT, W. I. The Fauna and Flora of Valencia Harbour on the West Coast of Ireland. xii. The Opisthobranchiate Mollusca. *P. Irish Ac.* v, pp. 816-832.
34. BEECHER, C. E. Conrad's types of Syrian fossils. *Amer. J. Sci.* ix, pp. 176-178.
35. BELLINI, R. Les *Ammonites* du calcaire rouge ammonitique (Toarcien) de l'Ombrie. *J. Conchyl.* xlviii, pp. 122-164, figg.
36. —. Molluschi extramarini dell' isola di Capri. *Boll. Soc. zool. Ital.* i, pp. 29-55.
37. BENECKE, E. W. *Myophoria inflata* Emmr., im schwäbischen Rhät. *N. Jahrb. Min.* 1900, i, pp. 218-224, pl. xi.
38. BERGH, R. Nudibranches et *Marsenia* provenant des Campagnes de la Princesse-Alice (1891-1897). *Result. Campag. Scient. Albert I de Monaco*, Fasc. xiv [1899], 45 pp., 2 pls.
39. —. Tectibranchia. *Lophocercidae*. *Ascoglossa*. *Semper's Reisen im Archipel der Philippinen*. Wissenschaftliche Resultate, Bnd. iv, pt. 2, lief. 1, pp. 159-208, pls. xiii-xvi.
40. —. Ergebnisse einer Reise nach dem Pacific (Schauinsland 1896-1897). Die Opisthobranchier. *Zool. Jahrb. Syst.* xiii, pp. 207-246, 3 pls.
41. —. Nudibranchiate Gasteropoda in "tion." ii. No. 3, pp. 49, 5 pls.

42. BETTONI, A. Fossili domeriani della provincia di Brescia. Pp. 1-88, 9 pls. [Abh. Schweiz. pal. Ges. xxvii.]
43. BINNIE, F. G. Land and freshwater Mollusca observed near Tadcaster. *Naturalist* 1900, pp. 13-16.
44. BITTNER, A. Ueber nachtriadische Verwandte der Gattung *Mysidiop-  
ptera*. *Verh. geol. Reichsanst.* 1900, pp. 207 & 208.
45. —. Ueber die triadische Lamellibranchiaten-Gattung *Mysidiop-  
ptera*. Sal. und deren Beziehungen zu paläozoischen Gattungen. *Jahrb.  
geol. Reichsanst.* 1, pp. 59-66, pl. vi.
46. —. Versteinerungen aus den Trias-Ablagerungen des Süd-Ussuri-  
Gebietes in der Ostsibirischen Küstenprovinz. (In Russian with  
German translation.) *Trudui geol. Kom.* vii, No. 4, 1899, pp. 35,  
4 pls.
47. —. Trias Brachiopoda and Lamellibranchiata. Translated by  
Dr A. H. Foord and Mrs A. H. Foord. *Pal. Ind.* ser. 15, iii, pt. 2,  
1899, pp. 76, 12 pls.
48. BLADEN, W. W. *Dreissensia polymorpha*, with attached pearl. *Rep.  
North Staffordsh. Club* xxxiv, p. 65, 1 pl.
49. BLANCKENHORN, M. Neues zur Geologie und Paläontologie Aegyptens.  
i. *Zeitschr. Deutsch. geol. Ges.* lii, pp. 21-47.
50. —. Das Alter der Schylthalschichten in Siebenbürgen und die  
Grenze zwischen Oligocän und Miocän. *T. c.* pp. 395-402.
51. —. Neues zur Geologie und Paläontologie Aegyptens. ii. Das  
Paläogen. *T. c.* pp. 403-479.
52. —. Studien in der Kreideformation im südlichen und westlichen  
Siebenbürgen. *T. c.* Protok. pp. 23-37, figg.
53. —. Das Neogen in Aegypten und seine Pectinidenfauna. *Centrbl.  
Min.* 1900, pp. 209-216.
54. BLAYAC, J. Sur le crétacé inférieur du bassin de l'Oued Cherf (Algérie).  
*Trav. Lab. Geol. Grenoble* v, pp. 19-27. (Extr. *Ann. Univers.  
Grenoble* xi, No. 3, p. 465, 1899.)
55. BLOOMER, H. H. On some malformed specimens of *Anodonta cygnea*  
L. *J. Malac.* vii, pp. 136-138, pl. vii.
56. —. Notes on some further malformed specimens of *Anodonta*  
*cygnea* L. *T. c.* pp. 177 & 178, fig.
57. BODE, G. Verbreitung der Mollusken fauna im Untersönen von  
Braunschweig. *Jahresber. Ver. Braunschweig* xi, pp. 154-159.
58. BOEHM, G. Reisenotizen aus Ost-Asien. *Zeitschr. Deutsch. geol.  
Ges.* lii, pp. 554-558.
59. BÖHM, J. Ueber cretaceische Gastropoden [und Lamellibranchiaten]  
vom Libanon und vom Karmel. *T. c.* pp. 189-219, pls. v-vii, figg.
60. BOETTGER, D. Nekrolog. Archdiakonus Dr Adolf Schmidt. *Nachrbl.  
Deutsch. malak. Ges.* 1900, pp. 1-3.
61. BOTTAZZI, F. & ENRIQUES, R. Recherches physiologiques sur le  
système nerveux viscéral des Aplysies et de quelques Céphalopodes.  
*Arch. ital. Biol.* xxxiv, pp. 111-143.
- BOUTAN, C. [See APOSTOLIDES (16).]
- BOYCE, R. [See HERDMAN & BOYCE (221).]

62. BROILL, F. Zur Fauna der Pachycardientuffe der Seiser Alp. Centrbl. Min. 1900, pp. 369-373.
63. BROWN, C. On the occurrence of Gasteropods (*Platystomella scotoburdigalensis*) in a *Lepidodendron* from Craighleith Quarry, Edinburgh. Tr. Edinb. geol. Soc. vii, 1897, pp. 244-251, figg.
64. BROWNE, E. T. The Fauna...of Valencia Harbour on the West Coast of Ireland. I. The pelagic fauna (1895-98). P. Irish. Ac. v, pp. 667-693.  
BRUMPT, E. [See APOSTOLIDES (16).]
65. BRUSINA, S. Zur Molluskenfauna des Mittelmeeres. Nachrbl. Deutsch. malak. Ges. 1900, pp. 86-89.
66. \* —. Neue Stütze für die Evolutionstheorie. Ausz. von O. Boettger. Zool. Garten xli, p. 26 [fide Bibl. Zool. v, p. 152].
67. BRYANT, F. W. Description of a new Californian land shell [*Epiphragmophora bowersi*]. Nautilus xiii, p. 122.
68. —. *Epiphragmophora harperi*, n. sp. [California]. T. c. pp. 143 & 144.
69. BUCKMAN, S. S. Report on the collection of Jurassic fossils in the Cheltenham College Museum. Rep. Cheltenham Soc. 1898, pp. 45-55.
70. BUCHNER, O. Beiträge zur Formenkenntnis der einheimischen Anodonten mit besonderer Berücksichtigung der württembergischen Vorkommnisse. Jahresh. Ver. Württemb. lvi, pp. 60-223, pls. i-iv.
71. —. Nachträge zur Revision der Varietäten von *Helix pomatia* L. T. c. pp. 224-237, pl. v.  
BUSH, K. J. [See VERRILL & BUSH (537).]
72. BYNE, L. St G. On the forms of the *Lacuna puteolus* (Turton). J. Conch. ix, pp. 341 & 342.
73. BYRNES, E. F. The maturation and fertilization of the egg of *Limax agrestis* (Linné). J. Morphol. xvi, pp. 201-236, 2 pls.
74. CALL, R. E. A descriptive illustrated catalogue of the Mollusca of Indiana. Rep. Indiana Geol. xxiv, pp. 337-535, 78 pls.  
Review by C. T. S., Nautilus xiv, pp. 95 & 96.
75. CAMUS, L. Contribution à l'étude de la coagulation du sang et de la fonction anticoagulante du foie. Action directe et indirecte du sang et des tissus de l'escargot sur la coagulation du sang. Cinquante Soc. Biol. 1899, pp. 379-387.
76. —. Le sang de l'Escargot et la coagulation. C.R. Soc. Biol. vii, pp. 495 & 496.
77. CANAVARI, M. Hopliiti Titoniani dell' Appennino Centrale. Atti Soc. Toscana, Mem. xvii, pp. 95-104, pl. v.
78. —. La fauna degli strati con *Aspidoceras acanthicum* di Monte Serra presso Camerino. Parte quarta (Cephalopoda: *Simoceras* [cont.], *Perisphinctes* [Appendice], *Aspidoceras*). Palæontogr. ital. vi, pp. 1-15, pls. i-vi [xx-xxv].
79. CARAZZI, D. Sull' embriologia dell' *Aplysia limacina* L. Monit. Zool. ital. xi, pp. 124-127.
80. —. Risposta alla replica del dott. Mazzarelli. T. c. pp. 245-1

81. [CARAZZI, D.] L' embriologia dell' *Aplysia limacina* L. fino alla formazione delle strisce mesodermiche. Le prime fasi dello sviluppo del *Pneumodermom mediterraneum* van Ben. Anat. Anz. xvii, pp. 77-102, 6 figg. in text.
82. —. Georgevitch und die Embryologie von *Aplysia*. T. c. pp. 382-384, 1 fig.  
CAZIOT, E. [See LOCARD & CAZIOT (283).]
83. CHASTER, G. W. A cross between *Limnaea stagnalis* and *L. auricularia*. J. Conch. ix, pp. 282 & 283, figg.
84. CHATELET, C. Quelques mots sur la Faune des lignites de Saint-Geniès-de-Comolas et de Saint-Laurent-des-Arbres. Mem. Ac. Vaucluse xix, pp. 155-159.
85. CHIAMENTI, A. Contribuzione allo studio della Malacofauna Adriatica. Nota sulla Famiglia delle Veneride, e delle Petricolide. Riv. ital. Sci. Nat. xx, pp. 9-15.
86. CHOFFAT, P. Recueil de monographies stratigraphiques sur le système crétacique du Portugal. Deuxième étude. Le crétacique supérieur au nord du Tage. Mem. Com. geol. Portugal 1900, 287 pp., 11 pls.
87. CHUN, C. Aus den Tiefen des Weltmeeres. Jena, 1900, 4to.
88. CLAPP, G. H. Land Mollusca of Kennebunkport, Me. Nautilus xiv, pp. 63 & 64.
89. CLELAND, H. F. The Calciferous of the Mohawk Valley. Bull. Amer. Pal. No. 13, pp. 26, pls. 15 & 16.  
CLESSIN, S. [See MARTINI & CHEMNITZ (311).]
90. COCKERELL, T. D. A. Note on the Asiatic species of *Philomycus*. J. Malac. vii, p. 127.
91. —. *Limax coccineus* Gistel. Nautilus xiii, pp. 117 & 118.
92. —. Notes on *Veronicella*. T. c. p. 131.
93. —. A new *Philomycus* [*P. secretus*, North Carolina]. Op. cit. xiv, p. 59.
94. —. Note on *Ashmunella hyporhyssa* (Ckll.). T. c. p. 72.  
— [See also PILSBRY & COCKERELL (419).]
95. COLEMAN, A. P. The Iroquois Beach. Tr. Canad. Inst. vi, pp. 31-44.
96. COLLETT, O. Contributions to Ceylon Malacology: (2) Description of a new Helicoid land shell [*Acavus polei*] from the Southern Province. J. Ceylon Asiat. Soc. xv [1899], pp. 153 & 154, 1 pl.
97. COLLIER, E. Edgar Leopold Layard, C.M.G., F.Z.S., &c. J. Conch. ix, pp. 329-331.
98. COLLINGE, W. E. Note on the anatomy of *Zonites rollei* Kobelt. P. Malac. Soc. London iv, pp. 37 & 38, figg.
99. —. Report on the Slugs. In Willey's Zoological Results, Pt. iv, pp. 429-438, 2 pls., 1900.
100. —. Description of a new species of *Anadenus* [*A. dautzenbergi*] from China. J. Malac. vii, pp. 133-135, pl. vi.
101. —. Obituary. G. Sherriff Tye. T. c. pp. 146 & 147, port.
102. —. Description of a new species of *Veronicella* [*V. gilsoni*] from the Fiji Islands. T. c. p. 179.

103. [COLLINGE, W. E.] Note on the *Gæotis douvillei* of De Morgan. T. c. pp. 179 & 180.
104. —. A collection of slugs from South Africa, with descriptions of some new species. Ann. S. African Mus. ii, pp. 1-8, pls. i & ii.
105. CORSI, A. F. Moluscos del Uruguay. An. Mus. Montevideo ii, pp. 291-528, figg.  
Many forms are included which purport to be new species on the authority of PILSBRY, but all appear to have been described elsewhere and recorded in past years.
106. COSSMANN, M. Faune Pliocénique de Karikal (Inde Française). J. Conchyl. xlviii, pp. 14-66.
107. —. Rectifications de nomenclature. Rev. paleozool. iv, pp. 42-46, 104, 143 & 144, 186.
108. —. Observations sur quelques coquilles crétaciques recueillies en France. C.R. Ass. France 1899, Part 2, pp. 396-402, pls. i & ii.
109. —. Mollusques Éocéniques de la Loire-Inférieure. Bull. Soc. Ouest France ix, pp. 307-360, pls. xxii-xxvi.
110. —. Note sur les Gastropodes du gisement bathonien de Saint-Gaultier (Indre). Bull. Soc. géol. France xxvii, pp. 543-585, pls. xiv-xvii.
111. —. Seconde note sur les mollusques du Bathonien de Saint-Gaultier (Indre). Op. cit. xxviii, pp. 165-203.
112. — & PISSARRO, G. Faune éocénique du Cotentin. (Mollusques.) Bull. Soc. géol. Normand. xix, pp. 19-75, pls. i-vi.
113. CUMMING, L. Report on the Fossil *Cephalopoda* in the [Rugby] Museum. Rep. Rugby Soc. 1899 [1900], pp. 1-6, map.
114. CRICK, G. C. Note on some fossil Cephalopoda from Cornwall. Tr. géol. Soc. Cornwall xii, pp. 336-341, figg.
115. —. Catalogue of the Fossil Cephalopoda in the British Museum (Natural History), Part III: A correction. Geol. Mag. 1900, p. 93.
116. —. Note on the Horizon and Locality of *Nautilus truncatus* of Sowerby. T. c. pp. 514 & 515.
117. —. Note on *Ephippioceras ditellarium* J. de C. Sowerby, sp., and *E. costatum* Foord. T. c. pp. 560 & 561.
118. —. Note on Zieten's Type-specimens of *Ammonites polygonius* and *Ammonites discoides*. T. c. pp. 561-564.  
CUENOT, L. [See APOSTOLIDES (16).]
119. CUNNINGHAM, J. T. Report of the Fisheries Committee [Oyster-culture in Cornwall]. Rep. Cornwall Soc. 1899, pp. 22-30.
120. DA COSTA, S. I. Descriptions of new species of land shells from Central and South America. P. Malac. Soc. London iv, pp. 66 & 67, pl. vii.
121. DALL, W. H. Contributions to the Tertiary Fauna of Florida, with especial reference to the Silex Beds of Tampa and the Pliocene Beds of the Caloosahatchie River, including in many cases a complete revision of the generic groups treated of and their American Tertiary species. Part v. Teleodermacea: *Solen* to *Diplodonta*. Tr. Wagner Inst. iii, pp. i-vii, 949-1218, pls. xxxvi-xlvii.



122. [DALL, W. H.] Synopsis of the family *Tellinidae* and of the North American species. P. U. S. Mus. xxiii, pp. 285-326, pls. ii-iv.
123. —. Synopsis of the family *Cardiidae* and of the North American species. T. c. pp. 381-392.
124. —. Additions to the Insular land-shell faunas of the Pacific coast, especially of the Galapagos and Cocos Islands. P. Ac. Philad. 1900, pp. 88-106, pl. viii.
125. —. A new species of *Capulus* [*C. californicus*] from California. Nautilus xiii, p. 100.
126. —. Note on *Petricola denticulata* Sby. T. c. pp. 121 & 122.
127. —. A new species of *Lima* [*L. hamlini*, probably Pliocene]. Op. cit. xiv, pp. 15 & 16.  
Deposit may be Cretaceous, cf. t. c. p. 36.
128. —. A new *Murex* [*M. petri*] from California. T. c. pp. 37 & 38.
129. —. Some names which must be discarded. T. c. pp. 44 & 45.
130. —. A new species of *Cerion* [*C. stevensoni*, Bahamas]. T. c. p. 65.
131. —. On a genus (*Phyllaplysia*) new to the Pacific Coast [*P. taylori*, n. sp.]. T. c. pp. 91 & 92.
132. —. A new species of *Pleurobranchus* [*P. californicus*] from California. T. c. pp. 92 & 93.
133. —. Note on a new abyssal Limpet. Science xi, p. 914.
134. —. Recent work on Mollusks. Op. cit. xii, pp. 822-825.  
— [See also HITCHCOCK (230).]
135. DAUTZENBERG, P. Croisières du Yacht Chazalie dans l'Atlantique. Mollusques. Mem. Soc. zool. France xiii, pp. 145-256, pls. ix & x.
136. —. Description d'une espèce nouvelle appartenant au genre *Hemicardium* [*H. tegulatum*]. J. Conchyl. xlviii, pp. 5-8, pl. i pars.
137. —. Description d'une espèce nouvelle du genre *Cyrena*, provenant des Nouvelles-Hébrides. T. c. pp. 105-108, pl. v.
138. —. Diagnose d'une nouvelle espèce d'*Unio* [*U. fruhstorferi*] provenant de l'Indo-Chine. T. c. p. 429.
139. —. Rectification de nomenclature. T. c. pp. 460 & 461.
140. — & DUROUCHOUX, P. Faunule malacologique des environs de Saint-Malo. Feuille Natural. 1900, pp. 39-62.
141. — & FISCHER, H. Rectification de nomenclature. J. Conchyl. xlviii, p. 460.
142. — & —. Description d'un mollusque nouveau. Bull. Soc. zool. France xxiv, pp. 207-209, 1 fig. in text.  
— [See also BAVAY & DAUTZENBERG (31).]
143. DAVENPORT, C. B. On the variation of the shell of *Pecten irradians* Lamarck, from Long Island. Amer. Natural. xxxiv, pp. 863-877, figg.
144. DAWSON, C. List of Wealden and Purbeck-Wealden fossils. Rep. Brighton Soc. 1898, pp. 31-37.
145. \*DEDEKIND, A. Ein Beitrag zur Purpurkunde. Neue Ausgaben seltener älterer Schriften über Purpur. Berlin, 1898, 8vo, 364 pp. [Fide Nachrbl. Deutsch. malak. Ges. 1900, p. 29.]

146. DESTINEZ, P. Quelques fossiles nouveaux du Famennien, rencontrés dans les assises (Fa 2a), (Fa 2c) et (Fa 1b), à La Hesse (Tohogne), au Bois de Mont (Clavier) et à Clémodeau (Villers-le-Temple). Ann. Soc. geol. Belgique xxvii, pp. clvi-clxi.
147. DIBLEY, G. E. Zonal features of the Chalk Pits in the Rochester, Gravesend, and Croydon areas. P. Geol. Ass. xvi, pp. 484-499.
148. DIENER, C. Die triadische Cephalopoden-Fauna der Schiechlinghöhe bei Hallstatt. Beitr. Pal. Oesterr.-Ung. xiii, pp. 3-42, pls. i-iii.
149. \*—-. Mittheilungen über einige Cephalopodensuiten aus der Trias des südlichen Bakony. Palæont. Anhang zu Band 1 Res. Wiss. Erforsch. Balatounees. 1899. [Cf. Verh. geol. Reichsanst. 1899, p. 328.]
150. DOMENICO DEL CAMPANA. I Cefalopodi del Medolo di Valtrompia. Boll. Soc. geol. Ital. xix, pp. 555-644, pls. vii & viii.
151. DONALD, J. On some recent Gastropoda referred to the family *Turritellidae* and their supposed relationship to the *Murchisoniidae*. P. Malac. Soc. London iv, pp. 47-55, pl. v.
152. DOUVILLÉ, H. Sur quelques *Rudistes* américains. Bull. Soc. geol. France xxviii, pp. 205-221.
153. —. Sur la distribution géographique des Rudistes, des Orbitolines, et des Orbitoides. T. c. pp. 222-235.
154. DOUXAMI, H. & REVIL, J. Note sur les Terrains Tertiaires du plateau des déserts (près Chambéry). Bull. Soc. Savoie v, 1899, pp. 105-138, map.
155. DREW, G. A. Locomotion in *Solenomya* and its relatives. Science xi, pp. 171 & 172.
156. \*—-. *Foldia limatula*. Mem. Johns Hopkins Univ. iv, 37 pp., 5 pls. [Fide Bibl. Zool. iv].
157. —. Locomotion in *Solenomya* and its relatives [*Nucula* and *Foldia*]. Anat. Anz. xvii, pp. 257-266, 12 figg. in text.
- 157A. DROUET, H. Unionidés du Bassin de la Seine. Mem. Ac. Dijon vii, pp. 49-131, 1 pl.  
The volume is dated 1901, but the paper appears to have been published or distributed as a separate work two or three years ago.
158. DUMAS, —. Conchyliologie Bourbonnaise. Mollusques terrestres testacées. Rev. Sci. Bourbonnais xiii, pp. 66-79, 141-154.
159. DUPUIS, P. & PUTZEYS, —. Diagnoses de quelques Coquilles nouvelles provenant de l'État indépendant du Congo. Ann. Soc. malac. Belgique xxxv, Bull. pp. xiii-xix, figg.  
DUROUCHOUX, P. [See DAUTZENBERG & DUROUCHOUX (140).]
160. DYBOWSKI, B. Kilka uwag o nowych formach zwierząt fauny Bajkalu. Kosmos polski xxv, pp. 487-491.
161. —. Beobachtung über das Wachstum der *Limnæa stagnalis* L. Nachrbl. Deutsch. malak. Ges. 1900, pp. 111-114.
162. —. Beschreibung einer Hinterkiemer-Schnecke aus dem Baikalsee (*Ancylodoris baicalensis* m.). T. c. pp. 143-152, pl. ii pars.
163. EHRMANN, P. Diagnosen einiger neuer japanischer Landschnecken. Zool. Anz. xxiii, pp. 379-383.

164. EMERSON, B. K. A new Bivalve from the Connecticut River Trias. *Amer. J. Sci.* x, p. 58, fig.
165. ENDERLE, J. Über eine anthracolithische Fauna von Balia Maaden in Kleinasien. *Beitr. Pal. Oesterr.-Ung.* xiii, pp. 49-109, pls. iv-viii.  
ENRIQUES, P. [See BOTTAZZI & ENRIQUES (61).]
166. ETHERIDGE, J. Little-known and undescribed Permo-Carboniferous Pelecypoda in the Australian Museum. *Rec. Austral. Mus.* iii, pp. 178-187, pls. xxxi-xxxiii.
167. FAUSSEK, V. Untersuchungen über die Entwicklung der Cephalopoden. *Mt. Stat. Neapel* xiv, pp. 83-237, 5 pls. and 11 figg. in text.
168. FERRISS, J. H. In search of *Polygyra pilsbryi* [n. sp. from Arkansas]. *Nautilus* xiv, pp. 25-31.
169. —. A new *Lampsilis* [*L. simpsoni*] from Arkansas. *T. c.* pp. 38 & 39, figg.
170. —. The Great Smoky Mountains. *T. c.* pp. 49-59.
171. FISCHER, H. Description d'une espèce nouvelle de *Melampus* [*M. biscayensis*] provenant du Golfe de Gascogne. *J. Conchyl.* xlviii, pp. 66-69, figg.
172. —. Notes sur la faune de Haut-Tonkin. v. Description d'une espèce nouvelle de *Plectopylis* [*P. francois*]. *Bull. Sci. France Belgique* xxxii [1899], pp. 329-332, figg.  
— [See also DAUTZENBERG & FISCHER (141, 142).]
173. FOORD, A. H. Monograph on the Carboniferous Cephalopoda of Ireland. Part III, containing the families *Tainoceratidae*, *Trigonoceratidae*, *Triboloceratidae*, *Rinoceratidae*, *Coloceratidae*, and *Solenoceras* (in part). Pp. 49-126, pls. xviii-xxxii. [*Pal. Soc. Mon.*]
174. FRIERSON, L. S. A new Alabama *Unio* [*U. hagleri*]. *Nautilus* xiii, pp. 109 & 110, pl. ii.
175. —. An hour on the great raft. *Op. cit.* xiv, pp. 67 & 68.
176. FUCINI, A. Brevi notizie sulle Ammoniti del Lias medio dell' Appennino centrale esistenti nel Museo di Pisa. *Pr. verb. Soc. Toscana* xii, pp. 52-55.
177. —. Ammoniti del Lias medio dell' Appennino centrale esistenti nel Museo di Pisa. *Palæontogr. ital.* vi, pp. 17-78, pls. vii-xiii.
178. FULTON, H. A new species of *Bulimulus* from Costa Rica and a new *Spiraculum* from Assam. *Nautilus* xiv, pp. 87 & 88.
179. GARSTANG, W. The plague of *Octopus* on the South Coast, and its effect upon the Crab and Lobster Fisheries. *J. Mar. Biol. Ass.* vi, pp. 260-273.
180. GATLIFF, J. H. Note on some Victorian Marine Mollusca. *Victorian Natural.* xvii, p. 54.
181. —. Note on the type of *Thalotia dubia*, a shell described by Tenison-Woods. *T. c.* pp. 112 & 113, fig.  
— [See also PRITCHARD & GATLIFF (427-430).]
182. GEINITZ, E. Tertiär im Untergrund von Wismar. *Arch. Ver. Mecklenb.* liii, pp. 198-207.
183. GEMMIL, J. F. Negative evidence regarding influence of nutrition on sex. *Comm. Millport Stat.* i, pp. 32-36.

184. GEORGEVITCH, P. M. Zur Entwicklungsgeschichte von *Aplysia depilans*. Anat. Anz. xvii, pp. 145-174, 30 figg. in text.
185. GERMAIN, L. De l'effet de poisons minéraux sur quelques Mollusques terrestres et fluviatiles de France. Bull. Soc. Rouen xxxiv, pp. 71-78.
186. —. Description d'une nouvelle espèce d'*Helix* [*H. leontinei*, France]. T. c. pp. 197-199.
187. GEYER, —. Beiträge zur Molluskenfauna Württembergs. Jahresh. Ver. Württemb. lvi, pp. 281-301.
188. GILCHRIST, J. D. F. The genus *Paraplysia*, with description of a new species. Tr. S. African Soc. xi, pp. 121-124, pl. xvi.
189. \*GIRARDOT, A. Matériaux pour la paléontostatique de la Franche-Comté septentrionale. Les Mollusques du système oolithique. Besançon, 1900, 135 pp. (Mém. Soc. d'émul. Doubs) [fide Bibl. Zool. v, p. 149].
190. GIRAUD, J. Comparaison des dépôts de l'oligocène inférieur dans le sud de la Limagne et l'île de Wight. Bull. Mus. Paris 1900, pp. 204 & 205.
191. GIRTY, G. H. Devonian and Carboniferous Fossils [from the Yellowstone National Park]. Mon. U.S. Geol. Surv. xxxii, Part 2, pp. 479-578, pls. lxi-lxxvi.  
     GODET, P. [See JAQUET (246).]
192. GODWIN-AUSTEN, H. H. On the anatomy of *Hemiplecta floweri* E. A. Smith, from Perak, Malay Peninsula; with notes on some other Eastern genera. P. Malac. Soc. London iv, pp. 31-36, pl. iv.  
     — . [See also SYKES (509).]
193. GOLDFUSS, O. Die Binnenmollusken Mittel-Deutschlands. Leipzig, 8vo, 1900, pp. viii & 320.
194. GORDON, M. M. O. On the fauna of the Upper Cassian Zone in Falzarego Valley, South Tyrol. Geol. Mag. 1900, pp. 337-349.
195. GRABAU, A. W. Siluro-Devonic contact in Erie County, New York. Bull. Geol. Soc. Amer. xi, pp. 347-376, pls. xxi & xxii.
196. GREDLER, V. Nekrolog. [Lorenz Fuchs]. Nachrbl. Deutsch. malak. Ges. 1900, p. 62.
197. —. Zur Conchylien-Fauna von China. xx Stück. Progr. öffentlich. Obergymn. Franciscaner Bozen 1900, pp. 15-24.
198. GREPPIN, E. Description des fossiles du bajocien supérieur des environs de Bâle. 3<sup>m</sup>e Partie, pp. 127-210, 7 pls. [Abh. Schweiz. pal. Ges. xxvii.]
199. GRIFFIN, L. E. The arterial circulation of *Nautilus pompilius*. Johns Hopkins Univ. Circ. xix, pp. 53-56, figg.
200. GUDE, G. K. Notes on a collection of Helicoid land shells from Japan and the Loo-Choo Islands, with descriptions of two new species of *Helicidæ*. P. Malac. Soc. London iv, pp. 8-23, pl. ii.
201. —. Further notes on Helicoid land shells from Japan, the Loo-Choo, and Bonin Islands, with descriptions of seven new species. T. c. pp. 70-80, pl. viii.
202. —. Note on Helicoid land shells from the Canara  
     J. Malac. vii, p. 127.

203. [GÜDE, G. K.] Notes on the genus *Sesara* Alb., with descriptions of two new forms. T. c. pp. 139-143, figg.
204. —. Description of a new variety of *Isomeria subcastanea* Pfr. T. c. pp. 144-146, figg.
205. —. Description of a new species of *Plectopylis* [*P. lepida*] from Tonkin. Ann. Nat. Hist. v, p. 313.
206. —. Descriptions of new species of Japanese Land-shells. Op. cit. vi, pp. 398-401, 453-456.
207. GUIART, J. Nouvelle classification des Opisthobranches. C.R. Soc. Biol. vii, pp. 425 & 426.
208. —. Les centres nerveux viscéraux de l'Aplysie. T. c. pp. 426 & 427.
209. —. Les Mollusques Tectibranches. Causeries scient. Soc. Zool. France 1900, pp. 77-132, 4 pls., 35 cuts in text.
210. —. Les origines du système nerveux chez les Gastéropodes. Bull. Soc. zool. France xxiv, pp. 193-197.
211. —. Les méfaits du poulpe (*Octopus vulgaris*) en Bretagne. Op. cit. xxv, pp. 118-120.  
GULICK, A. [See PILSBRY & GULICK (420).]
212. GÜRICH, G. Nachträge zum Palaeozoicum des Polnischen Mittelgebirges. N. Jahrb. Min. B.B. xiii, pp. 331-388, pls. xiv & xv, figg.
213. HALLER, B. Betrachtungen über die Phylogense der Gonade und deren Mündungs-verhältnisse bei niederen Prosobranchiaten. Zool. Anz. xxiii, pp. 61-66.
214. —. Erklärung. T. c. p. 189.
215. HANITSCH, R. An Expedition to Mount Kina Balu, British North Borneo. J. Straits Asiat. Soc. xxxiv, pp. 49-88.  
Mollusca at p. 76.
216. HARLÉ, E. Rochers creusés par les Colimaçons à Salies-du-Salat (Haute-Garonne). Bull. Mus. Paris 1900, pp. 141-144.
217. HARMER, F. W. The Pliocene Deposits of the East of England.—Part II: The Crag of Essex (Waltonian) and its relation to that of Suffolk and Norfolk. Quart. J. Geol. Soc. lvi, pp. 705-738.
218. HEDLEY, C. *Turricula scalariformis* Ten. Woods—its occurrence in New South Wales. Rec. Austral. Mus. iii, p. 218.
219. —. *Scala revoluta* Hedley—its occurrence in Fiji. T. c. p. 218.
220. —. Studies on Australian Mollusca. Parts I & II. P. Linn. Soc. N. S. Wales xxv, pp. 87-100, pls. iii & iv; pp. 495-513, pls. xxv & xxvi.  
HEIDER, K. [See KORSCHOLT & HEIDER (272).]
221. \*HERDMAN, W. A. & BOYCE, R. Lancashire Sea-Fisheries Memoir, No. 1. Oysters and Disease. London, 1899, 4to, 60 pp., 8 pls. [fide J. Malac. vii, p. 151].
222. HERRICK, C. L. The Geology of the White Sands of Mexico. J. Geol. viii, pp. 112-125, pls. i-iii.  
HESCHELER, K. [See LANG (275).]

223. HESSE, R. Untersuchungen über die Organe der Lichtempfindung bei niederen Thieren. vi. Die Augen einiger Mollusken. *Zeitschr. Wiss. Zool.* lxxviii, pp. 379-477, pls. xxv-xxxii.
224. HIDALGO, J. G. Obras Malacologicas. Atlas, Part 3½ (15 plates). Madrid, 1900, 4to.  
Illustrations of Philippine Island land-shells; also to appear in Mem. Ac. Madrid.
225. HILL, R. T. & VAUGHAN, T. W. The Lower Cretaceous Gryphaeas of the Texas region. *Bull. U. S. Geol. Surv.* No. 151, 1898, pp. 66, 35 pls.
226. HIND, W. Life-zones in the British Carboniferous Rocks. Report on Carboniferous Rocks and Fossils: South Pennine District. *Rep. Brit. Ass.* 1899, pp. 371-375.
227. —. *Scaldia minuta* sp. nov. [Middle Coal measures, Staffordshire]. *Rep. North Staffordsh. Club* xxxiv, p. 93, pl.
228. —. On the Occurrence in British Carboniferous Rocks of the Devonian genus *Palæoneilo*, with a Description of the New Species *P. carbonifera*. *Quart. J. Geol. Soc.* lvi, pp. 46-49, figg.
229. —. A monograph of the British Carboniferous Lamellibranchiata. Part v. *Celonotidae, Solenomyiidae, Conocariidae, Cardidae*. Pp. 361-476, pls. xl-liv. [Pal. Soc. Mon.]
230. HITCHCOCK, C. H. Geology of Oahu. *Bull. Geol. Soc. Amer.* xi, pp. 15-60.
231. HOERNES, R. Adalékok a Bakonyi Felső-Triasz *Megalodus* fajainak ismeretéhez. (Zur Kenntniss der Megalodonten aus der oberen Trias des Bakony.) *Földtani Kozl.* xxix, pp. 323-331, figg.; German translation, pp. 351-360.
232. HOLLAND, FR. Ueber alpine Formenreihen von *Psiloceras* aus Schwaben. *Jahresh. Ver. Württemb.* lvi, pp. 498-509, pls. viii & ix.
233. HOLLER, A. Über die Fauna der Meeresbildungen von Wetzelsdorf bei Preding in Steiermark. *Mt. Ver. Steiermark* xxxvi, pp. 48-71, map.
234. HOLMES, S. J. The early development of *Planorbis*. *J. Morphol.* xvi, pp. 369-458, 5 pls.
235. HOUSSAY, F. La forme et la vie. *Essai de la méthode mécanique en Zoologie*. Paris, 8vo, 1900, pp. 924, with 782 figg. in text. Mollusca; see pp. 37, 44, 81, 86, 90, 209, 218, 228, 304, 326, 373, 384, 412, 441, 447, 476, 734, 786.
236. HUENE, F. v. Ueber schwäbische Aucellen und eine verwandte Form. *N. Jahrb. Min.* 1900, i, pp. 48-56, pl. iv.
237. HUGHES, R. J. On colouring of Molluscs shells. *Sci. Gossip* vii, pp. 97-99, 145 & 146.
238. HUTTON, F. W. Note on *Paryphanta lignaria*. *Tr. N. Zealand Inst.* xxxii, p. 22, pl. ii.
239. IHERING, H. VON. On the South American species of *Mytilida*. *P. Malac. Soc. London* iv, pp. 84-98.
240. —. The *Musculus cruciformis* of the Order *Tellinacea*. *P. Ac. Philad.* 1900, pp. 480 & 481.
241. —. Os caracões do genero *Solaropsis*. *Rev. Mus. Paulista* — pp. 539-549, figg.  
— [See also PILSBRY (389).]

242. \*ILYIN, P. Das Gehörbläschen als Gleichgewichtsorgan bei den *Pterobracheida*. Centrbl. Physiol. xiii, pp. 691-694 [fide Bibl. Zool. v, p. 378].
243. IVOLAS, J. & PEYROT, A. Contribution à l'étude paléontologique des Faluns de la Touraine. Act. Soc. Bordeaux v, pp. 99-194.
244. JAEKEL, O. Ueber einen neuen Chitoniden, *Trachypleura*, n. g., aus dem Muschelkalk von Rüdersdorf. Zeitschr. Deutsch. geol. Ges. lii, Protok. pp. 9-14, figg.
245. JAKOWLEW, N. Die Fauna einiger oberpalaeozoischer Ablagerungen Russlands. I. Cephalopoden und Gastropoden. Trudui geol. Kom. xv, No. 3, 1899, pp. 140, 5 pls. In Russian, with German translation.
246. JAQUET, M. Faune de la Roumanie. Mollusques récoltés par le Dr M. Jaquet et déterminés par M. le Professeur P. Godet à Neuchâtel. Bull. Soc. Bucarest ix, pp. 386-391.
247. JOHANSEN, A. C. Bidrag til vore Ferskvandsmolluskers Biologi. Vid. Medd. 1899, pp. 147-230, figg.
248. JOHNSON, C. W. Some notes on *Rumina decollata* Linn. Nautilus xiii, p. 117.
249. —. Additional Chitons from the Pliocene of the Caloosahatchie River, Florida. T. c. p. 130.
250. —. Some notes on the land shells of Western Florida. T. c. pp. 141-143.
251. JONES, K. H. Certain terrestrial Testaceous Mollusca from South-Western Europe. J. Conch. ix, pp. 366-374.
252. JOUSSEAUME, —. Mollusques terrestres. *Clausilia*, *Rhodea*, et *Bulimus* Sud-Americanae. Bull. Soc. Philom. ii, pp. 5-44, pl. i.
253. KAYSER, E. Alguns fosseis paleozoicos do Estado do Paraná. Rev. Mus. Paulista iv, pp. 301-311, pls. i & ii.
254. —. *Jovellania triangularis* im Mitteldevon der Eifel. Centrbl. Min. 1900, pp. 118 & 119.
255. KELLOGG, J. L. The ciliary mechanism in the branchial chamber of the Pelecypoda. Science xi, pp. 172 & 173.
256. KELLY, H. M. A statistical study of the parasites of the *Unionidæ*. Bull. Illinois Lab. v [1899], pp. 399-418.
257. KELSEY, F. W. Dredging in San Diego Bay. Nautilus xiii, pp. 101 & 102.
258. KENDIG, A. B. John H. Thomson, Ph.D. T. c. pp. 113 & 114.
259. KENNARD, A. S. & WOODWARD, B. B. The Pleistocene non-marine Mollusca of Ilford. P. Geol. Ass. xvi, pp. 282-286.
260. KENYON, A. F. On some recent conchological discoveries in Victoria, Australia. P. Malac. Soc. London iv, p. 39.
261. —. On two new *Cypræidæ*. T. c. pp. 68 & 69, figg.
262. KEW, H. W. Spinning Molluscs. Zoologist 1900, pp. 289-320, pl. iii.
263. KITTL, E. Die Gastropoden der Esinokalk, nebst einer Revision der Gastropoden der Marmolatakalk. Ann. Hofmus. Wien xiv, pp. 1-237, pls. i-xviii [1899].

264. KNIGHT, G. A. F. The etymology of the names *Azeca* and *Assiminea* of Leach. J. Conch. ix, pp. 271-276.
265. —. Collecting trip in S.S. "Garland" with list of Mollusca obtained. Commun. Millport Stat. i, pp. 9-22.
266. KOBELT, W. Ein neuer *Clavator* [*C. placostyloides*, Madagascar]. Nachrbl. Deutsch. malak. Ges. 1900, p. 21.
267. —. Eine neue *Levantina* [*L. mardinensis*, Mesopotamia]. T. c. p. 156.
268. —. Subfossile Helices aus Valencia. T. c. pp. 185 & 186.
269. —. Iconographie der schalentragenden europäischen Meeresconchylien. Lief. xi-xiii (Band II, pp. 41-104, pls. xxxix-l). Wiesbaden, 1900.
270. — & MOELLENDOFF, O. VON. Zur Systematik der Pneumonomomen. Nachrbl. Deutsch. malak. Ges. 1900, p. 186.  
— [See also MARTINI & CHEMNITZ (311).]
271. KOKEN, E. Ueber triassische Versteinerungen aus China. N. Jahrb. Min. 1900, i, pp. 186-215, pls. ix & x, figg.
272. KORSCHULT, E. & HEIDER, K. Text-book of the Embryology of Invertebrates, translated..... by Matilda Bernard, revised..... by Martin F. Woodward. Vol. iv. London, 1900.
273. KÜNKEL, K. Zur Biologie der Nachtschnecken. Verh. Deutsch. zool. Ges. x, pp. 22-31.
274. LAESECKE, F. *Helix candidula* Studer im Huy. Nachrbl. Deutsch. malak. Ges. 1900, pp. 19 & 20.
275. LANG, A. Lehrbuch der vergleichenden Anatomie der wirbellosen Thiere. Zweite umgearbeitete Auflage. Mollusca von Karl Hescheler. Band iii, pp. viii & 509, figg. Jena, 1900.
276. LEBOUR, M. V. Land and freshwater Mollusca in Northumberland, collected chiefly at Corbridge-on-Tyne and on the lower Tweed. Naturalist 1900, pp. 65-67.
277. LERICHE, M. Description de la Faune d'eau douce sparnacienne de Cuvilly (Oise). Ann. Soc. geol. Nord xxviii, pp. 95-104, pl. ii.
278. —. Note sur la Faune de la tourbe de Wissant. T. c. pp. 283 & 284.
279. LEVI, T. Osservazioni sulla distribuzione dei fossili negli strati pliocenici di Castellarquato. Riv. ital. Pal. vi, pp. 59-78.
280. LINVILLE, H. R. Maturation and fertilization in pulmonate Gasteropods. Bull. Mus. Harvard xxxv, pp. 211-248, 4 pls.
281. LOCARD, A. Notices Conchyliologiques. LIV. Les *Gadinia* du système Européen. Echange xvi, pp. 70-72, 73-75.
282. —. Notices Conchyliologiques. LV. Les *Fissurella* des côtes de France. T. c. pp. 92-95.
283. — & CAZIOT, E. Les coquilles marines des côtes de Corse. Ann. Soc. Linn. Lyon xlii, pp. 193-272.
284. LODDER, M. List of the Tasmanian shells in the Tasman Museum collection, with the names of many species then represented therein. P. Soc. Tasmania 1900



285. LOGAN, W. N. The stratigraphy and invertebrate faunas of the Jurassic formation in the Freeze-out Hills of Wyoming. *Kansas quart.* ix, pp. 109-134, pls. xxv-xxxi.
286. —. A North American epicontinental sea of Jurassic age. *J. Geol.* viii, pp. 241-273.
287. LONGHI, P. Della pietra da coti o da mola Bellunese e di alcuni suoi fossili. *Atti Soc. Veneto-Trent.* iii [1897], pp. 41-86, pls. i-iii.
288. —. Di alcune *Gymnites* della nuova Fauna triassica di val di Pena presso Lorenzago. *Op. cit.* iv, pp. 3-32, pls. i-iv.
289. —. Di una varietà di *Caprina schiosensis* Boehm. *Riv. ital. Pal.* vi, pp. 88-91, 1 pl.
290. LÖNNBERG, E. Contributions to the biology of the Caspian Sea. *Ofv. Ak. Forh.* 1900, pp. 13-29.
291. LORENZ, T. Monographie des Fläscherberges. *Beitr. geol. Karte Schweiz* 40, pp. 63, 1 pl. fossila.
292. LORIOL, P. DE. Étude sur les mollusques et brachiopodes de l'oxfordien inférieur ou zone à *Ammonites renggeri* du Jura lédonien. Accompagnée d'une notice stratigraphique par M. Abel Girardot. 196 pp., 6 pls. [*Abh. Schweiz. pal. Ges.* xxvii.]
293. LOTZ, H. Die Fauna des Massenkalks der Lindiner Mark bei Giessen. *Schr. Ges. Marburg* xiii, pp. 197-236, 4 pls.
294. MACMUNN, C. A. On the gastric gland of Mollusca and Decapod Crustacea: its structure and functions. *Phil. Trans. B.* cxviii, pp. 1-34, pls. i-iv.
295. MARIANI, E. Fossili del giura e dell' infracretaceo nella Lombardia. *Atti Soc. Ital.* xxviii, pp. 367-448, 1 pl.
296. MARSHALL, J. T. On a British species of *Myrina*, with a note on the genus *Idas*. *J. Malac.* vii, pp. 167-170, figg.
297. —. Additions to British Conchology. *J. Conch.* ix, pp. 284-296, 332-338.
298. MARTEL, H. Sur les *Helcion pellucidus* Linné et *corneus* de Gerville. *Feuille Natural.* 1900, pp. 50 & 51, 2 figg.
299. —. Un *Chiton* voyageur. *T. c.* p. 71.
300. —. Liste des Coquilles marines, terrestres et d'eau douce recueillies aux environs de Cancale. *T. c.* pp. 108-110, 126-131, 144-149.
301. MARTENS, E. VON. Einige neue Arten südafrikanischer Landschnecken. *SB. Ges. naturf. Berlin* 1900, pp. 117-119.
302. —. Ueber die Bezeichnung der verschiedenen Richtung von Farbenbändern, Rippen, und Furchen, bei den Schalen der Mollusken. *T. c.* pp. 165-171.
303. —. Einige neue von Dr Fülleborn in Deutsch-Ostafrika gesammelte Landschnecken. *T. c.* pp. 177-180.
304. —. Ein von Pfahlwürmern (*Teredo*) durchlöcherter Holzstück aus Togo. *T. c.* p. 180.
305. —. Ueber Land- und Süßwasser-Schnecken aus Sumatra. *Nachrbl. Deutsch. malak. Ges.* 1900, pp. 3-18.  
Includes diagnosis of *Vivipara penangensis*, n. sp., Penang.

306. [MARTENS, E. VON.] Ueber einige Landschnecken aus Mittel-Italien. T. c. pp. 33-48, 65-76.
307. —. Ueber einige Landschnecken aus dem südwestl. Marokko. T. c. pp. 121-123.
308. —. Neue *Fissurella* aus Südbrasilien. T. c. p. 187.
309. —. Biologia Centrali-Americana. *Mollusca*, pp. 473-600, pls.
310. MARTIN, K. Die Eintheilung der versteinerungsführenden Sedimente von Java. Samm. geol. Mus. Leiden vi, pp. 135-245.
311. MARTINI & CHEMNITZ. Systematisches Conchylien-Cabinet, Lief. 450-458. *Eulimidae* and *Pyramidellidae* by S. CLESSIN, pp. 41-200, pls. xii-xl; *Buliminidae* by W. KOBELT, pp. 621-684, pls. xcv-ciii; *Zonites*, *Leucochroa*, *Naninidae* by W. KOBELT, pp. 941-988, pls. ccxvi-cclvii; *Auriculidae* by W. KOBELT, pp. 229-268, pls. xxxi, xxxii.
312. MASEFIELD, J. R. B. Staffordshire *Helices*: indigenous or introduced. Rep. North Staffordsh. Club xxxiv, pp. 57-64.
313. MATTHEW, G. F. Preliminary notice of the Etcheminian fauna of Newfoundland. Bull. Soc. N. Brunswick iv, pp. 189-197, pls. i-iii.
314. —. The Etcheminian Fauna of Smith Sound, Newfoundland. Tr. R. Soc. Canada v, sect. iv, pp. 97-123, pls. v-vii.
315. MAUGHAN, M. M. Definition of a new species of South Australian Polyplacophora. Tr. R. Soc. S. Austral. xxiv, p. 89, pl. i pars.  
MAY, W. L. [See TATE & MAY (516).]
316. MAYER-EYMAR, C. *Ampularia* (*Lanistes*) *bolteni* Chem. Eclog. geol. Helvet. vi, p. 120.
317. —. [Un singulier céphalopode (*Kerunia cornuta*, n. g. et sp.) de l'Eocène de l'Egypte.] T. c. p. 120.
318. —. [La distribution stratigraphique de l'*Ostrea* (*Gryphæa*) *vesicularis* Lk.] T. c. p. 121.
319. —. [L'apparition dès le Campanien (Sénonien) de *Ostrea* (*Gryphæa*) *angulata* Lk.] T. c. p. 121.
320. MAZZARELLI, G. Ancora sullo sviluppo dell' *Aplysia limacina*. Monit. Zool. ital. xi, pp. 224-230.
321. —. Un' ultima parola di risposta al Dott. Carazzi. T. c. pp. 342-344.
322. —. A proposito dell' Embriologia dell' *Aplysia limacina* L. Zool. Anz. xxiii, pp. 185 & 186.
323. —. Note sulla Morfologia dei Gasteropodi Tectibranchi. Biol. Centrbl. xx, pp. 110-120, figg.
324. MEINEL, F. Die Schneckenfauna der Umgebung von Schweinfurt. Schweinfurt, 1900, 32 pp., 2 pls. [From Progr. Kön. Gymn. Schweinfurt, 1899-1900.]
325. MELVILL, J. C. Description of *Bulinulus dukinfieldi*, n. sp., from Paraná, Brazil. P. Malac. Soc. London iv, p. 116, fig.
326. —. Descriptions of two new species of *Cypræa*, both of the subgenus *Trivia* Gray. Ann. Nat. Hist. vi, pp. 207-210, figg.
327. —. A revision of the textile *Conea* with description of *cholmondeleyi*, n. sp. J. Conch. ix, pp. 1

328. [MELVILL, J. C.] Sir Rawson William Rawson, K.C.M.G., C.B., &c. T. c. pp. 319 & 320.
329. —. Lovell Reeve; a brief sketch of his life and career, with a fragment of an autobiography, excerpts from his diary (1849), and correspondence. T. c. pp. 344-357, port.
330. — & STANDEN, R. Report on the Mollusca of the "Jackson-Harmsworth" Expedition to Franz-Josef Laud (1896-97), and of the "Andrew Coats" Cruise (1898) to Kolguev, etc. Mem. Manchester Soc. xlv, No. 4, 14 pp., fig.
331. MILLER, K. Die Schneckenfauna des Steinheimer Obermiocäns. Jahresh. Ver. Württemb. lvi, pp. 385-406, pl. vii.
332. MIQUEL, J. Note sur la géologie des Terrains tertiaires du département de l'Hérault. Le Miocène dans le Canton de Capetang et la vallée de Cruzy. Bull. Soc. Beziers xx, 1898, pp. 20-58.
333. MOELLENDORFF, O. VON. Zwei neue *Amphidromus* aus Annam. Nachrbl. Deutsch. malak. Ges. 1900, pp. 22-24.
334. —. Landschnecken von den Inseln Tsushima und Iki, Westjapan. T. c. pp. 107-111.
335. —. Zur Binnenmollusken-Fauna Annams III. T. c. pp. 117-121, 129-139.
336. —. *Blanfordia* A. Ad. T. c. pp. 153 & 154.
337. —. *Adelopoma*, Döring. T. c. pp. 154 & 155.
338. —. Ueber einige Nomenclaturfragen. T. c. pp. 161-178.
339. —. The land shells of the Caroline Islands. J. Malac. vii, pp. 101-126.  
— [See also KOBELT & MOELLENDORFF (270).]
340. MOJSISOVICS, E. Upper Triassic Cephalopoda Faunæ of the Himalaya. Translated [from the German original published in Denk. Ak. Wien lxiii, 1896] by Dr A. H. Foord & Mrs A. H. Foord. Pal. Ind. ser. 15, iii, pt. i, pp. 157, 22 pls.
341. MONTI, R. Sur la fine structure de l'estomac des gastéropodes terrestres. Arch. Ital. Biol. xxxii, pp. 357-369.  
From No. 331 in Zool. Rec. for 1899.
342. MORRELL, J. M. H. The growth of land snails [*Helix*]. Nautilus xiv, p. 9.
343. MOULIN, H. [See BAUMBERGER & MOULIN (28).]
344. \*MÜHLEN, M. zür. Über die einheimischen Perlmuscheln. Balt. Wochenschr. f. Landwirthsch. etc. xxxviii, pp. 173-175 [fide Bibl. Zool. v, p. 272].
345. MÜLLER, G. Versteinerungen des Jura und der Kreide. In W. Bornhardt, 'Zur Oberflächengestaltung und Geologie Deutsch-Afrikas' (Deutsch-Ost-Afrika vii, 1900), pp. 514-571, pls. xiv-xxv.
346. MURDOCH, R. Description of some new species of Pliocene Mollusca from the Wanganui District, with notes on other described species. Tr. N. Zealand Inst. xxxii, pp. 216-221, pl. xx.
347. NABIAS, B. DE. Recherches sur le système nerveux des Gastéropodes pulmonés aquatiques; cerveau des Limnées (*Limnæa stagnalis*). Pr. Verb. Soc. Bordeaux 1899, pp. xlvii-lxxiv, pls. i-iii.  
Apparently the original of No. 341 in last year's Record.
- NANSEN, F. [See POMPECKJ (423).]

348. NELLI, B. Fossili miocenici dell' Appennino aquilano. Boll. Soc. geol. Ital. xix, pp. 381-418, pl. iv.
349. NEWTON, R. B. Pleistocene Shells from the Raised Beach Deposits of the Red Sea. Geol. Mag. 1900, pp. 500-514, 544-560, pls. xx-xxii.
350. —. On marine Triassic Lamellibranchs discovered in the Malay Peninsula. P. Malac. Soc. London iv, pp. 130-135, pl. xii.
351. —. Fossil mollusca from the reef-limestones of Christmas Island. In C. W. Andrews' monograph of Christmas Island. London, 8vo, 1900, pp. 201-205.
352. NICHOLS, A. R. A list of the Marine Mollusca of Ireland. P. Irish Ac. v, pp. 477-662.
353. NICKLÈS, —. Sur un Aptychus de *Sonninia* du Bajocien des environs de Nancy. Bull. Soc. Nancy xvi, pp. 125 & 126.
354. NOBRÉ, A. Mollusques et Brachiopodes du Portugal. Ann. Sci. nat. Porto vi, pp. 79-140.
355. NOETLING, F. The Miocene of Burma. Verh. Ak. Amsterdam vii, No. 2, 131 pp., map.
356. —. Ueber die Auffindung von *Otoceras* sp. in der Salt Range. N. Jahrb. Min. 1900, i, pp. 139-141.
357. NORMAN, A. M. Museum Normanianum, or a catalogue of the Invertebrata of Europe, and the Arctic and North Atlantic Oceans, which are contained in the collection of the Rev. Canon A. M. Norman. vi. Mollusca Terrestria et Fluvialia. Supplement (to catalogue printed in 1890). Durham, 8vo, 23 pp., 1900.
358. NYLANDER, O. O. A list of shells from Northeastern Maine. Nautilus xiii, pp. 102-106.
359. OPPENHEIM, P. Palaeontologische Miscellaneen. III. 1. Ueber eine riesige *Perna* (*Pachyperna*, n. sbg., *laverduna*, n. sp.) aus dem Alttertiär Venetiens und die übrigen Perniden des Gebietes. 2. Beiträge zur Kenntniss des Oligocän und seiner Fauna in der venetianischen Voralpen. Zeitschr. Deutsch. geol. Ges. lii, pp. 237-326, pls. ix-xi.
360. —. Zur Kenntniss der alttertiären Binnenmollusken Südost-Frankreichs. T. c. pp. 390-394.
361. —. Ueber die grossen Lucinen und das Alter der "miocänen" Macigno-Mergel des Appennin. N. Jahrb. Min. 1900, i, pp. 87-94.
362. —. Sopra due nuovi *Pecten* del Miocene di Bassano. Riv. ital. Pal. vi, pp. 25-30, 1 pl.
363. —. Nuovi molluschi e vermi oligocenici del Veneto. T. c. pp. 30-39, 1 pl.
364. —. Il miocene di Verona ed il *Pecten besseri* degli autori. T. c. pp. 92-95.
365. —. Noch einmal über die grossen Lucinen des Macigno im Appennin. Centrbl. Min. 1900, pp. 375-377.
366. ORCUTT, C. R. West American Mollusca. Vol. 1, pp. 1-20. San Diego, Cal. 1900.
367. ORTMANN, A. E. Synopsis of the Collections of Invertebrate <sup>2</sup> made by the Princeton Expedition to Southern Patagonia. Sci. x, pp. 368-381.

368. OSTROOUMOFF, A. Note sur le dimorphisme sexuel chez le genre *Astarte* Sow. Zool. Anz. xxiii, pp. 499 & 500.
369. PALLARY, P. Coquilles marines du littoral du Département d'Oran. J. Conchyl. xlviii, pp. 211-422, pls. vi-viii, and figg.
370. —. Sur les Hélices bidentées de l'Oligocène algérien. Bull. Mus. Paris 1899, pp. 314-317.
371. PAQUIER, V. Sur quelques *Rudistes* nouveaux de l'Urgonien. Bull. Soc. Isère iv, 1899, pp. 93-96.  
Cf. C.R. Ac. Sci. séance 26 May 1896.
372. —. Sur la présence de Caprininés dans l'Urgonien. T. c. pp. 97-100.  
Cf. C.R. Ac. Sci. séance 15 June 1896.
373. —. Recherches géologiques dans le Diois et les Baronnies orientales. Trav. Lab. Geol. Grenoble v, pp. 149-438. (Extr. Ann. Univers. Grenoble. Thèse pour le doctorat...29 juin 1900....)
374. PARONA, C. Sulla dicotomia delle braccia nei Cefalopodi. Monit. Zool. ital. xi, Suppl. pp. 12 & 13.
375. PARTRIDGE, F. J. *Helix lapicida* L., mons. *sinistrorsum*, nov.? J. Malac. vii, pp. 180 & 181.
376. PÉGOT, G. Observations sur la présence d'un triple appareil copulateur chez un *Helix pomatia*. C.R. Soc. Biol. vii, pp. 294 & 295. [See also pp. 322 & 323.]
377. PELSENER, P. Note sur l'organisation du genre *Bathysciadium*. Bull. Soc. zool. France xxiv, pp. 209-211, 3 figg. in text.
378. PETCH, T. Notes on the distribution of land and freshwater Mollusca in Holderness. Tr. Hull Club i, pp. 98-104.  
PETROT, A. [See IVOLAS & PETROT (243).]
379. PFEFFER, G. Synopsis der ægopsiden Cephalopoden. Jahrb. Hamburg. Anst. xvii, Beiheft II, pp. 145-198.  
Many new names, but hardly any descriptions.
380. PFEIFFER, W. Die Gattung *Triboniophorus*. Zool. Jahrb. Anat. xiii, pp. 293-358, 4 pls.
381. PHILIPPI, E. Beiträge zur Morphologie und Phylogenie der Lamelli-branchien. II. Zur Stammesgeschichte der Pectiniden. Zeitschr. Deutsch. geol. Ges. lii, pp. 64-117, figg.
382. —. Ueber die echte "*Avicula reticulata* His." T. c. pp. 559-563, figg.
383. PHISALIX, C. Observations sur le sang de l'Escargot (*Helix pomatia*). Réduction de l'Hémocyanine. C.R. Soc. Biol. vii, pp. 729-732.
384. PILSBRY, H. A. The air-breathing Mollusks of the Bermudas. Tr. Connect. Ac. x, pp. 491-509, pl. lxii.
385. —. Note on the anatomy of *Guppya hopkinsi* Dall. P. Ac. Philad. 1900, p. 105, fig.
386. —. Note on the anatomy of the Helicoid genus *Ashmunella*. T. c. pp. 107-109, figg.
387. —. Mollusca of the Great Smoky Mountains. T. c. pp. 110-150, figg.

388. [PILSBRY, H. A.] Notices of new Japanese land snails. T. c. pp. 381-384.
389. —. New South American land snails. T. c. pp. 385-394, pls. xi & xii.
390. —. Note on the Australian *Pupidae*. T. c. pp. 426-430, figg.
391. —. Note on Polynesian and East Indian *Pupidae*. T. c. pp. 431-433.
392. —. Additions to the Japanese land snail fauna. II. T. c. pp. 443-448, pl. xiv.
393. —. Notes on certain Mollusca of Southwestern Arkansas. T. c. pp. 449-459, figg.
394. —. Lower Californian species of *Calocentrum* and *Berendtia*. T. c. pp. 550-555, figg.
395. —. *Sonorella*, a new genus of *Helices*. T. c. pp. 556-560, pl. xxi.
396. —. On the Zoological position of *Partula* and *Achatinella*. T. c. pp. 561-567, pl. xvii.
397. —. The Genesis of Mid-Pacific Faunas. T. c. pp. 568-581.
398. —. Additions to the Japanese land snail fauna. III. T. c. pp. 672-683, pls. xxiv & xxv.
399. —. *Metostrocon*, a new slug-like genus of dart-bearing *Helicidae*. P. Malac. Soc. London iv, pp. 24-30, pl. iii.
400. —. Note on *Thysanophora hornii* Gabb. Nautilus xiii, pp. 98-100.
401. —. Some *Zonitidae* collected by J. H. Ferriss in Arkansas and Choctaw Nation. T. c. p. 107.
402. —. A new American land shell [*Polygyra uvulifera*, n. var.] T. c. pp. 107 & 108.
403. —. Species of *Chlorostoma* of Southern and Eastern Patagonia. T. c. pp. 110-112.
404. —. New species and subspecies of American land snails. T. c. pp. 114 & 115.
405. —. Note on the varieties of *Epiphragmophora mormonum*. T. c. p. 128.
406. —. A new *Calliostoma* from Florida. T. c. pp. 128 & 129.
407. —. Notes on some southern Mexican shells. T. c. pp. 139-141.
408. —. A new N.-E. Australian Amnicoloid. T. c. p. 144.
409. —. A new species of *Sistrum* [*S. nicocheanum*, Argentina]. Op. cit. xiv, pp. 3 & 4.
410. —. A new Guatemalan *Glandina* [*G. iheringi*]. T. c. pp. 4 & 5.
411. —. Land shells from rejectamenta of the Rio Grande at Mesilla, New Mexico, and of the Gallinas R. at Las Vegas, N. M. T. c. pp. 9 & 10, 47.
412. —. Notices of some new Japanese [non-marine] Mollusks. T. c. pp. 11 & 12, 32 & 33.
413. —. Notices of new American [land] snails. T. c. pp. 40 & 4
414. —. On some Japanese land snails. T. c. pp. 59

415. [PILSBRY, H. A.] Catalogue of the genus *Phenacolepas* Pilsbry. T. c. pp. 61-63.
416. —. Land snails of Cape May, N. J. T. c. pp. 73-75.
417. —. New species of Japanese land Mollusca. T. c. pp. 79-82.
418. —. New records of New Mexican snails. T. c. pp. 82 & 83.
419. — & COCKERELL, T. D. A. Records of Mollusca from New Mexico. Nautilus xiv, pp. 85 & 86.
420. — & GULICK, A. Descriptions of new Japanese land snails. T. c. pp. 88-91.
421. — & VANATTA, E. G. A partial revision of the *Pupæ* of the United States. P. Ac. Philad. 1900, pp. 582-610, pls. xxii & xxiii.  
— [See also TRYON (529).]
- PISSARRO, G. [See COSSMANN & PISSARRO (112).]
422. PLANT, J. R. Snails and their shells. Tr. Eastbourne Soc. iii, pp. 268-275.
423. POMPECKJ, J. F. The Jurassic Fauna of Cape Flora, Franz Josef Land. With a geological sketch of Cape Flora and its neighbourhood by Fridtjof Nansen. Norweg. North Polar Exped. i, 147 pp., 3 pls.
424. PRICE, S. F. Mollusca of Southern Kentucky. Nautilus xiv, pp. 75-79.
425. \*PRITCHARD, G. B. Mollusca. Handbook of Melbourne for use of Austral. Assoc. Adv. Sci. 1900, pp. 135-141 [Fide J. Malac. vii, p. 154].
426. —. Note on new name for a Victorian *Marginella*. Victorian Natural. xvii, p. 55.
427. — & GATLIFF, J. H. On some new species of Victorian Mollusca. P. Soc. Victoria xii, pp. 100-106, pl. viii.
428. — & —. Catalogue of the Marine Shells of Victoria. Part III. T. c. pp. 170-205.
429. — & —. Catalogue of the Marine Shells of Victoria. Part IV. Op. cit. xiii, pp. 139-156.
430. — & —. On some new species of Victorian Mollusca. No. 4. T. c. pp. 131-138, pls. xx & xxi.
431. PROCHÁZKA, V. J. Miocén moravský [On the Miocene of Mähren]. SB. Bohmisch. Ges. 1899, No. xxix, 45 pp.
432. —. Miocénové ostrovy v krasu Moravském [Miocene outliers in Mähren]. Rozp. Ceske Ak. Praze viii, No. 41, 37 pp.  
PUTZEYS, —. [See DUPUIS & PUTZEYS (159).]
433. QUINTON, R. Communication osmotique chez l'Invertébré marin normal, entre le milieu intérieur de l'animal et le milieu extérieur. C.R. Ac. Sci. cxxxi, pp. 905-908.
434. —. Perméabilité de la paroi extérieure de l'Invertébré marin, non seulement à l'eau, mais encore aux sels. T. c. pp. 952-955.
435. RABL, H. Über die Chromatophoren der Cephalopoden. Verh. Deutsch. zool. Ges. x, pp. 98-107.
436. RANGLES, W. B. On the anatomy of *Turritella communis* Risso. P. Malac. Soc. London iv, pp. 56-65, pl. vi.

437. [RANGLES, W. B.] On the anatomy of the genus *Acavus* Montfort. T. c. pp. 103-113, pl. ix.
438. RAULIN, V. Succession des mollusques terrestres et d'eau douce dans le bassin tertiaire de l'Aquitaine. Bull. Soc. geol. France xxviii, pp. 45-54.
439. REED, F. R. C. Woodwardian Museum Notes: A new Carboniferous Cephalopod, *Pleuromutilus? scarlettensis*, sp. nov. Geol. Mag. 1900, pp. 105 & 106, pl. vi.
440. REHBINDER, B. Eine Kreidefauna aus der Astrachaner Steppe. N. Jahrb. Min. 1900, i, pp. 216-218.
441. REKSTAD, J. Om en forekomst af muslingskaller under moræne ved Bergen. Norske Selsk. Skr. xxxvii, pp. 40-43, figg.
442. RETZIUS, G. Zur Kenntniss des sensiblen und des sensorischen Nervensystems der Würmer und Mollusken. Biol. Untersuch. ix, pp. 83-96.
- REVIL, J. [See DOUXAMI & REVIL (154).]
443. RICE, E. L. Fusion of filaments in the Lamellibranch gill. Biol. Bull. ii, pp. 71-80, 8 figg. in text.
444. RIEMENSCHNEIDER, C. Malacozoologische Notizen. Clausilienmissbildung mit 2 Mündungen. Schnecken aus einer Höhlung eines Pockholzstammes. Eine linksgewundene *Vitrina pellucida* Müll. *Helix moguntina* Desh. var. *major* linksgewundenen. Nachrbl. Deutsch. malak. Ges. 1900, pp. 114-116.
445. ROCHEBRUNE, A. T. DE. De l'existence, à l'embouchure de la Gironde, de l'*Ostrea angulata* Lamk., à l'époque Gallo-Romaine. Bull. Mus. Paris 1900, pp. 113-115.
446. ROGERS, T. The eggs of the Kerry slug, *Geomalacus maculosus* Allman. Irish Natural. ix, pp. 168-170, pl. v pars.
447. ROTHPLETZ, A. Ueber eigenthümliche Deformationen jurassischer Ammoniten durch Drucksuturen und deren Beziehungen zu den Stylolithen. SB. Ak. München 1900, pp. 3-32.
448. ROUX, J. A. C. Études géologiques sur les Monts Lyonnais (suite). Ann. Soc. Linn. Lyon xlv, pp. 105-156.
449. ROWE, A. W. The zones of the White Chalk of the English coast. i. Kent and Sussex. With appendices by Prof. J. W. Gregory, D.Sc., and Dr F. L. Kitchin, M.A., F.G.S. The cliff sections by C. Davies Sherborn. P. Geol. Ass. xvi, pp. 289-368, pls. viii-x.
450. ROWLEY, R. R. Descriptions of new species of Fossils from the Devonian and Subcarboniferous rocks of Missouri. Amer. Geol. xxv, pp. 261-273, pl. v.
451. RUTOT, A. Note sur la position stratigraphique de la *Corbicula luminalis* dans les couches quaternaires du Bassin anglo-franco-Belge. Mem. Soc. Belge Geol. xiv, pp. 1-24.
452. SACCO, F. I Molluschi dei terreni terziarii del Piemonte e della Liguria. Pt. xxviii. (*Isocardiidae*, *Cyprinidae*, *Veneridae*, *Petricolidae*, *Cyrenidae*, and *Sphaeridae*), 98 pp., 14 pls. Turin, 4to, 1900.
453. SALOMON, W. Ueber *Pseudomonotis* und *Pleuromectites*. Zeitschr. Deutsch. geol. Ges. lii, pp. 348-359, pl. xiv.
454. SCHEDEL, J. Ein lebendes Exemplar von *Pleurotomaria* Lam. Nachrbl. Deutsch. malak. Ges. 1900, pp. 18 & 19.



455. SCHIMKEWITSCH, W. Experimentelle Untersuchungen an meroblastischen Eiern. I. Cephalopoden. Zeitschr. wiss. Zool. lxvii, pp. 491-528, pls. xxviii-xxxi; lxviii, pp. 478 & 479.
456. SCHUBERT, R. J. Zum Vorkommen von *Melanopsis martiniana* im marin-mediterranen Tegel von Wolfsdorf (Nord-Mähren). Verh. geol. Reichsanst. 1900, pp. 143-145.
457. SCHUCHERT, C. On the lower Silurian (Trenton) Fauna of Baffin Land. P. U. S. Mus. xxii, pp. 143-177, pls. xii-xiv.
458. SCOTT, T. The Invertebrate fauna of the inland waters of Scotland. Rep. Fish. Board Scotland 1899, pp. 132-204.
459. SELIGO, A. Untersuchungen in den Stuhmer Seen. Dantzig, 1900, 8vo.
460. SELL, H. Verzeichnis der im Torfmoor auf "Bispeengen" bei Kopenhagen vorkommenden Mollusken. Nachrbl. Deutsch. malak. Ges. 1900, pp. 59-62, fig.
461. —. *Assiminea grayana* Leach. Eine neue Art für die Fauna Dänemarks. T. c. p. 155.
462. SIMIONESCU, I. Note sur quelques Ammonites du néocomien français. Trav. Lab. Geol. Grenoble v, pp. 1-17, 1 pl. (Extr. Ann. Univers. Grenoble xi, No. 3, p. 475, 1899.)
463. —. Synopsis des Ammonites néocomiennes [Infravalanginien (Berriasien)—Aptien (incl.)]. T. c. pp. 109-143. (Extr. Ann. Univers. Grenoble xi, No. 3, p. 493, 1899.)
464. SIMPSON, C. T. New and unfigured *Unionida*. P. Ac. Philad. 1900, pp. 74-86, pls. i-v.
465. —. Synopsis of the *Naiades*, or pearly fresh-water mussels. P. U. S. Mus. xxii, pp. 501-1044, pl. xviii.
466. —. On the evidence of the *Unionida* regarding the former courses of the Tennessee and other Southern Rivers. Science xii, pp. 133-136.
467. SIMROTH, H. Ueber einige Nacktschnecken von Montenegro [Dalmatien] und Corsica. Nachrbl. Deutsch. malak. Ges. 1900, pp. 77-85, 97-107.
468. —. Neuere Arbeiten über die Verbreitung der Gastropoden. Zool. Centrbl. vii, pp. 77-91.
469. —. Neuere Arbeiten über die Morphologie und Biologie der Gastropoden. T. c. pp. 821-861.
470. —. Über Selbstbefruchtung bei Lungenschnecken. Verh. Deutsch. zool. Ges. x, pp. 143-147, 1 fig. in text.
471. —. Matériaux pour servir à l'Histoire naturelle de l'île de Célèbes par Paul et Fritz Sarasin. Tom. I & II. Arch. Sci. Nat. x, pp. 418-434.
472. SMIDT, H. Nachtrag zu dem Aufsatz "Die Sinneszellen der Mundhöhle von *Helix*." Anat. Anz. xvii, pp. 170-172, 2 figg.
473. SMITH, E. A. Note on the identity of *Ampullaria brohardi* Granger, with *A. polita* Desh. P. Malac. Soc. London iv, pp. 40 & 41, fig.
474. —. Description of *Leptopoma* (*Trocholeptopoma*) *mitchellæ*, n. sp., from Borneo. T. c. p. 42, fig.

475. [SMITH, E. A.] Note on *Strombus belutschiensis* Melvill. T. c. p. 43.
476. —. Note on the genera *Callocardia* and *Vesicomya*. T. c. pp. 81–83, figg.
477. —. A list of a small collection of [non-marine] shells from China. J. Malac. vii, pp. 157–161, figg.
478. —. List of Mollusca from Kina Balu, N. Borneo. Rep. Raffles Library and Mus. Straits Settlements 1899 [1900], p. 6.
479. —. Sylvanus Hanley. J. Conch. ix, pp. 269 & 270.
480. —. A list of the marine mollusca collected by Mr C. W. Andrews at Christmas Island. P. Zool. Soc. London 1900, pp. 117 & 118.
481. —. A monograph of Christmas Island (Indian Ocean) by C. W. Andrews. London, 8vo, 1900. *Mollusca*, pp. 54–59, pl. viii.
482. SMITH, J. P. The development and phylogeny of *Placenticeras*. P. Calif. Ac. geol. i, pp. 181–232, pls. xxiv–xxviii.
483. SOKOLOV, N. Die Schichten mit *Venus konkensis* am Flusse Konka. Trudui geol. Kom. ix, No. 5, 1899, pp. 96, 5 pls. In Russian, with German translation.
484. SOLGER, B. Zur Kenntniss des Gehörorgans von *Pterotrachea*. Schr. Ges. Danzig x, pp. 65–76, pl. i.
485. SOWERBY, G. B. On some Marine shells from Pondoland and the Kowie, with descriptions of seventeen new species. P. Malac. Soc. London iv, pp. 1–7, pl. i.
486. —. Descriptions of new species of marine Mollusca collected by the late Otto Koch at the Island of Cebú, Philippines. T. c. pp. 126–129, pl. xi.
487. —. Descriptions of two new species of shells: *Murex marcoensis* and *Cassis booleyi*. J. Malac. vii, pp. 162 & 163, figg.
488. —. New species of Mollusca of the Genera *Voluta*, *Conus*, *Siphonalia*, and *Euthria*. Ann. Nat. Hist. v, pp. 439–441, pl. xi.  
STANDEN, R. [See MELVILL & STANDEN (330).]
489. STEARNS, R. E. C. List of shells collected by Vernon Bailey in Heron and Eagle Lakes, Minnesota, with notes. P. U. S. Mus. xxii, pp. 135–138.
490. —. Description of a new variety of *Haliotis* from California, with faunal and geographical notes. T. c. pp. 140–142.  
Compare No. 502 last year.
491. —. Fossil land shells of the John Day Region with notes on related living species. P. Washington Ac. ii, pp. 651–660, pl. xxxv.
492. —. Mollusca associated with *Mastodon* remains. Nautilus xiii, pp. 100 & 101.
493. —. Notes on the distribution of and certain characters in the *Saxidomi* of the West Coast. Op. cit. xiv, pp. 1–3.
494. —. *Vallonia pulchella* Müll., in Los Angeles and elsewhere in California, etc. T. c. pp. 65–67.
495. —. Exotic mollusca in California. Science xi, pp. 655–659.
496. —. The fossil shells of the Los Angeles Tunnel clays. Op. xii, pp. 247–250.

497. STEENSTRUP, J. *Heteroteuthis* Gray, med Bemærkninger om *Rossia-Sepiola*-Familien i Almindelighed. Danske Selsk. Skr. ix, pp. 283-300, 1 pl.
498. STEFANI, C. DE. Il Miocene nell' Appennino settentrionale a proposito di due recenti lavori di Oppenheim e di Sacco. Pr.-Verb. Soc. Toscana xii, pp. 56-60.
499. \*STEINACH, E. Über die natur der Chromatophoren-muskeln der Cephalopoden. Sitzber. deutsch. nat.-med. Ver. Lotos. Prag 1900, pp. 1-10.
500. STEMPELL, W. Ueber die Bildungsweise und der Wachstum der Muschel- und Schneckenschalen. Biol. Centrbl. xx, pp. 595-606, 637-644, 665-680, 698-703, 731-741.
501. STERKI, V. New *Pisidia* and general notes. Nautilus xiv, pp. 5-8.
502. \*STOPES, H. Pleistocene man in the Thames Gravels. Athenæum, No. 3795, July 21, 1900, p. 93.
503. \*——. On the discovery of *Neritina fluviatilis* with a Pleistocene fauna and worked flints in High Terrace gravels of the Thames Valley. J. Anthropol. Inst. xxix, pp. 302 & 303.
504. STRAND, E. En malacologisk notits. Norske Selsk. Skr. xxvii, pp. 44 & 45.
505. STUBBS, A. G. The land and freshwater shells of Tenby, South Wales. J. Conch. ix, pp. 321-328, 358-365.
506. STURANY, R. W. A. Obrutschew's Mollusken- Ausbeute aus Hochasien. Denk. Ak. Wien lxx, pp. 17-48, pls. i-iv.
507. SURBECK, G. Die Molluskenfauna des Vierwaldstättersees. Mt. Ges. Luzern iii, pp. 429-556, 2 pls. and map.  
From Rev. Suisse Zool. vi.
508. SUTER, H. Observações sobre alguns caracóes terrestres do Brazil. Rev. Mus. Paulista iv, pp. 329-337, pl. iii.
509. SYKES, E. R. Mollusca. Fauna Hawaiiensis ii, pp. 271-412, pls. xi & xii, 1900.  
With intercalations on anatomy by H. H. GODWIN-AUSTEN.
510. —. On the genus *Acavus* Mont. P. Malac. Soc. London iv, pp. 114 & 115.
511. —. On *Despina cinnamomea*, n. sp., and type of a new subgenus *Chersodespina*, with notes on some allied forms. T. c. pp. 136-138, figg.
512. —. Notes on the non-marine Mollusca of Norfolk and Phillip Islands, with descriptions of new species. T. c. pp. 139-147, pl. xiii.
513. —. Malacological notes. 1. On a three-valved *Ischnochiton*. 2. On the occurrence of *Cryptoplax* in South Africa. 3. Description of *Acroptychia pyramidalis*, n. sp. 4. Description of *Clausilia granulosa*, n. sp., from Peru. J. Malac. vii, pp. 164-166, figg.
514. TATE, R. On the occurrence of marine fossiliferous rocks at Kerguelen Island. Tr. R. Soc. S. Austral. xxiv, pp. 104-108, pls. ii & iii.
515. —. Section of a well-bore at Mulgundawa, near Wellington, South Australia. T. c. pp. 109-111.
516. — & MAY, W. L. Descriptions of new genera and species of Australian Mollusca (chiefly Tasmanian). T. c. pp. 90-103.

517. TÄUBER, H. Beiträge zur Morphologie der Stylommatophoren. Ann. Mus. St Petersburg. v, pp. 373-411, pls. ix-xii.
518. TAYLOR, F. *Paludestrina jenkinsi* Smith, at Droylsden, Lancashire. J. Conch. ix, p. 340.
519. TAYLOR, G. W. Notes on the Marine [and Land] Mollusca of the Pacific Coast of Canada. Tr. R. Soc. Canada v, sect. iv, pp. 233-250.
520. —. *Hemphillia glandulosa*: a slug new to the Canadian list. Ottawa Natural. xiv, p. 150.
521. TAYLOR, J. W. A monograph of the Land and Freshwater Mollusca of the British Isles. Pts. vi & vii (Vol. i, pp. i-viii, 321-454, pls. iii-vi). Leeds, 1900.
522. TEILMAN-FRIIS, A. C. Malakologiske Smaating. Vid. Medd. 1899, pp. 429 & 430, figg.
523. TEMPÈRE, J. Ruban linguale et radule des Gastéropodes et Céphalopodes. Microgr. prep. viii, pp. 112-118, pls. xiii & xiv.  
TODD, E. A. [See ALLEN & TODD (5).]
524. TORNQUIST, A. Die Arbeiten der drei letzten Jahre über fossile Cephalopoden. v. Trias-Cephalopoden. Zool. Centrbl. vii, pp. 909-919.
525. —. Eine Neubenennung des *Ceratites subnodosus* (Münster) mihi. Centrbl. Min. 1900, pp. 92-94.
526. —. Neue Beiträge zur Geologie und Paläontologie der Umgebung von Recoaro und Schio (im Vicentin). iv. Der Sturia-Kalk (*Trinodorus*-Niveau). Zeitschr. Deutsch. geol. Ges. lii, pp. 118-153, pls. ii-iv.
527. —. Einige Bemerkungen über das Vorkommen von *Ceratites subnodosus* nov. var. *romanicus* in der Dobrudscha. N. Jahrb. Min. 1900, i, pp. 173-180, pl. viii.
528. TOULA, F. Neue geologische Mittheilungen aus der Gegend von Rustschuk in Bulgarien. T. c. pp. 29-47.
529. TRYON'S Manual of Conchology.....Continuation by H. A. PILSBRY. Second Series. Vol. xiii (Pts. 49-52), pp. 1-253, pls. i-lxxii, front. *Bulimulidæ* and *Helicidæ*.
530. UGOLINI, P. R. Sopra alcuni Pettinidi delle arenarie Mioceniche del circondario di Rossano in Calabria. Atti Soc. Toscana Mem. xvii, pp. 105-113, pl. vi.
531. VALLENTIN, R. Notes on the fauna of Falmouth, from 1st January to 10th September, 1898, and from May, 1899, to the end of that year. J. Inst. Cornwall xiv, pp. 196-209.  
VANATTA, E. G. [See PILSBRY & VANATTA (421).]
532. \*VASSEL, E. La pintadine de Vaillant et l'acclimatation de la mère-perle sur le littoral Tunisien. Tunis, 16 pp., 1 pl. (from Revue Tunisienne) [fide Bibl. Zool. v, p. 272].  
VAUGHAN, T. W. [See HILL & VAUGHAN (225).]
533. VAYSSIÈRE, A. Description de deux nouvelles espèces de Pleurobranchidés. J. Conchyl. xlviii, pp. 8-11.
534. —. Considérations sur les différences qui existent entre la faune des Opisthobranches des côtes océaniques de la France et les côtes méditerranéennes. C.R. Ac. Sci.

535. [VAYSSIÈRE, A.] Note sur un nouveau cas de condensation embryogénique observé chez le *Pelta coronata*, type de Tectibranchie. Zool. Anz. xxiii, pp. 286-288.
- 535A. VERATTI, E. Ricerche sul sistema nervoso dei *Limax*. Mem. Ist. Lombardo xviii, pp. 163-179, pls. i-iii.
536. VERRILL, A. E. The Nudibranchs and naked Tectibranchs of the Bermudas. Tr. Connect. Ac. x, pp. 545-550, pl. lxvi.
537. — & BUSH, K. J. Additions to the marine Mollusca of the Bermudas. T. c. pp. 513-544, pls. lxiii-lxv.
538. VINCENT, E. Rectifications de nomenclature. Ann. Soc. malac. Belgique xxxiv, Bull. p. cxxix.
539. —. Quelques mots sur les Rhyncholites de l'Éocène Belge. Op. cit. xxxv, Bull. pp. iv-ix, figg.
540. —. Observations sur *Ostrea inaspecta* Desh. T. c. Bull. pp. xxviii-xxx, figg.
541. VIOLA, C. Sopra alcuni pettini del calcare a piccole nummuliti dei dintorni di Subiaco in provincia di Roma. Boll. Com. geol. Ital. xxxi, pp. 247-255, pls. v & vi.
542. VOGEL, F. Neue Mollusken aus dem Jura von Borneo. Samm. geol. Mus. Leiden vi, pp. 40-76, 5 pls.
543. WALCOTT, C. D. Cambrian Fossils [from the Yellowstone National Park]. Mon. U. S. Geol. Surv. xxxii, pt. 2, pp. 440-466, pls. lx-lxv.
544. WALKER, B. Changes with growth of *Lithasia obovata* (Say). Nautilus xiii, pp. 97 & 98.
545. —. The genuine *Planorbis corpulentus* Say. T. c. pp. 131-138, pl. iii.
546. —. Note on the habits of *Limnæa mighelsi* W. G. Binn. Op. cit. xiv, pp. 8 & 9.
547. —. Supplemental note on *Planorbis corpulentus* Say. T. c. pp. 33 & 34.
548. —. On an addition to the [land] Molluscan Fauna of Canada. Ottawa Natural. xiv, p. 24.
549. WEEKS, F. B. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for the year 1897. Bull. U. S. Geol. Surv. No. 156, 1898, pp. 130.
550. —. Ditto for the year 1898. Op. cit. No. 162, 1899, pp. 163.
551. WELCH, J. Abnormalities in the shell of *Helix nemoralis*. Irish Natural. ix, pp. 163-167, pl. v, pars.
552. —. Large colony of *Vertigo antivertigo* Drap., in Co. Down. J. Conch. ix, pp. 280 & 281.
553. WELLER, S. The succession of fossil faunas in the Kinderhook beds at Burlington, Iowa. Rep. Geol. Surv. Iowa x, pp. 61-79.
554. —. A bibliographic index of North American Carboniferous Invertebrates. Bull. U. S. Geol. Surv. No. 153, 1898, pp. 653.
555. \*WETZEL, G. Die organischen Substanzen der Schalen von *Mytilus* und *Pinna*. Hoppe-Seyler's Zeitschr. f. Physiol. Chemie xxix, pp. 386-410 [fide Bibl. Zool. v, p. 376].

556. WHEELER, C. LE ROY. *Conus consors* Sowb. Nautilus xiv, pp. 86 & 87.
557. WHITFIELD, R. P. List of fossils, types and figured specimens used in the paleontological work of R. P. Whitfield, showing where they are probably to be found at the present time. Ann. New York Ac. xii, pp. 139-186.
558. WIEGMANN, F. Anatomische Untersuchung von *Solaropsis*. Nachrbl. Deutsch. malak. Ges. 1900, pp. 178-184.
559. —. Binnenmollusken aus Westchina und Centralasien. I. Die Heliciden. Ann. Mus. Zool. St Petersburg. 1900, pp. 1-186, pls. i-iv.
560. WILCOX, M. A. Notes on the anatomy of *Acmaea testudinalis* Müller. Science xi, p. 171.
561. —. Hermaphroditism among the *Docoglossa*. Op. cit. xii, pp. 230 & 231.
562. WILLIAMSON, M. B. Aestivation of *Epiphragmophora traskii* in Southern California. Nautilus xiv, pp. 13-15.
563. WOLLEMAN, A. Über die Bivalven und Gastropoden der Necomthone der Umgegend von Braunschweig. Jahresh. Ver. Braunschweig xi, pp. 84-86.
564. —. Anzahl der im Sommer im necomsandsteine des Teutoburger Waldes gesammelten Bivalven. T. c. pp. 91 & 92.
565. —. *Aucella keyserlingi* Lahusen aus dem Deutschen Necom. T. c. pp. 106 & 107.
566. —. Die Bivalven und Gastropoden des deutschen und holländischen Neocoms. Abh. Preuss. geol. Landesanst. n. f. Hft. 31, pp. 180, 8 pls.
567. WOODS, H. A monograph of the Cretaceous Lamellibranchia of England. Pt. II. *Trigonidae*, *Mytilidae*, and *Dreissenidae*. Pp. 73-112, pls. xv-xix. [Pal. Soc. Mon.]
568. WOODWARD, B. B. Notes on *Tapes pullastra* Montagu. J. Conch. ix, p. 365.
569. — & ADAMS, L. E. Mollusca. In Hist. of Hampshire and the Isle of Wight. London, 1900. Mollusca at pp. 103-108.
- [See also KENNARD & WOODWARD (259).]
570. WOODWARD, M. F. Note on the anatomy of *Voluta ancilla* (Sol.), *Neptunopsis gilchristi* Sby., and *Volutilithes abyssicola* (Ad. & Rve.). P. Malac. Soc. London iv, pp. 117-125, pl. x.
- [See also KORSCHULT & HEIDER (272).]
571. WRIGHT, B. H. New Southern Unios [*U. kingii*, Georgia]. Nautilus xiii, p. 138.
572. ZAHÁLKA, Č. Pásmo IX.—Březenské—Křídového útvaru v Poohří. [Stage IX of the Cretaceous formation along the River Eger.] SB. Bohmisch. Ges. 1899, no. iv, 103 pp., pls.
573. —. Pásmo X.—Teplické—Křídového útvaru v Poohří. [Stage X of the Cretaceous formation along the River Eger.] T. c. no. xi, pp. 51, pls.

574. ŽELÍZKO, J. V. O Křídovém útvaru okolí Pardubic a Přelouče. [On the Chalk formation in the neighbourhood of Pardubic and Přelouc.] T. c. no. xviii, 18 pp.
575. ZSCHOKKE, F. Die Thierwelt der Hochgebirgseen. Denk. Schweiz. Ges. xxxvii, pp. i-viii, 1-400, pls. i-viii. Mollusca, pp. 235-264.

## SUPPLEMENTAL TITLES.

See note in preface, p. 3.

576. CALL, R. E. A revision and synonymy of the *parvus* group of *Unionidæ*. P. Indiana Ac. 1895 [1896], pp. 109-119, 6 pls.
577. —. Second contribution to a Knowledge of Indiana Mollusca. T. c. pp. 135-146.
578. —. On a small collection of Mollusks from Northern Indiana. T. c. pp. 246-250.
579. COSSMANN, M. Description d'espèces du Terrain Tertiaire des environs de Paris. J. Conchyl. xxv, pp. 106-137 [1885].
580. —. Catalogue des coquilles fossiles de l'Éocène des environs de Paris. Ann. Soc. malac. Belgique (4) i, pp. 17-186, pls. i-viii [1887].
581. —. Catalogue illustré des coquilles fossiles de l'Éocène des environs de Paris. Op. cit. xxii, pp. 1-214, pls. i-viii [1888].
582. —. [Review of] Die Gastropoden der Schichten von St Cassian der Südalpinen Trias von Ernst Kittl. J. Conchyl. xliii, pp. 61-68 [1895].
583. DALL, W. H. Note on *Leda cœlata* Hinds. Nautilus x, p. 70 [1896].
584. MONTEROSATO, A. DI. Nomenclatura generica e specifica di alcune Conchiglie mediterranee. Palermo, 1884, 152 pp.
585. SCHRÜDER, R. Notice sur quelques *Unionidæ* allemands de l'Elbe et des environs de Halle sur Saale. Bull. Soc. malac. France ii, pp. 209-230 [1885].
- Several other papers in this volume, which were titled in 1885 as not having been seen, and then partly digested, have now been more fully treated in the systematic portion.
586. SIMROTH, H. Über die Niere der Pulmonaten, aus dem Nachlasse von Dr C. Semper. Reisen im Arch. Philippinen, Bnd. iii, Ergänzungsheft, pp. 47-91, 5 pls. [1894].
587. VINCENT, G. Liste des Coquilles du Tongrien inférieur du Limbourg Belge. Ann. Soc. malac. Belgique (4) i, pp. 3-16 [1887].
588. VOGEL, F. Beiträge zur Kenntniss der Holländischen Kreide. Samm. geol. Mus. Leiden N. F., ii, 1, pp. 1-64, 3 pls. [1895].

## II. BIOLOGY.

## A.—ANATOMY, PHYSIOLOGY.

## 1. GENERAL.

Anatomy of Invertebrata; APOSTOLIDES (16).—General characters of the classes of mollusca—their anatomy; HOUSSAY (235).—Anatomy of the Mollusca; LANG (275).

Animal of *Spirula* figd.; CHUN (87).—Anatomy of some Cephalopods; STEENSTRUP (497).

Animals of *Cacilioides* and *Carychium*; ADAMS (3).—Animal of *Physa gyrina*; BAKER (23).—On *Marsenia*, *Lophocercus*, &c.; BERGH (39).—Anatomy of several Nudibranchs and Tectibranchs; BERGH (38).—Anatomy of some slugs from S. Africa; COLLINGE (104).—Anatomy of *Anadenus dautzenbergi*; COLLINGE (100).—Anatomy of *Hemiplecta floweri* and *neptunus*; GODWIN-AUSTEN (192).—Anatomy of *Godwinia* and *Philonesia* (n. genn. of *Zonitidae*); GODWIN-AUSTEN in SYKES (509).—Anatomy of *Tectibranchiata*; GUIART (209).—Animal of *Fissuridea*, p. 95, *Notarchus*, p. 97; HEDLEY (220).—Anatomy of *Solaropsis*; IHERING (241).—Biology of slugs; KÜNKEL (273).—Morphology of Tectibranchs; MAZZARELLI (323).—Anatomy of *Bathysciadium conicum*, n. gen. and sp.; PEISENER (377).—Anatomy of *Triboniophorus*; PFEIFFER (380).—Anatomy of *Cryptostrocon*, *Metostrocon* (n. gen.), and *Xanthonyx*; PILSBRY (399).—Anatomy of *Epiphragmophora huchitana* (type of n. gen. *Sonorella*); PILSBRY (395).—Anatomy of *Partula rosea* and *Achatinella dolei*; PILSBRY (396).—Anatomy of *Ashmunella*; PILSBRY (386).—Anatomy of *Halio priamus*; POIRIER, Bull. Soc. malac. France ii, p. 17 [1885].—Anatomy of *Turritella communis*; RANGLES (436).—Anatomy of genus *Acavus*; RANGLES (437).—Morphology of *Stylommatophora*; TÄUBER (517).—Anatomy of *Helicidae*, *Macrochlamys*, and *Buliminopsis*; WIEGMANN (559).—Anatomy of *Solaropsis helicina*; WIEGMANN (558).—Anatomy of *Acmea testudinalis*; WILCOX (560).—Anatomy of *Voluta ancilla*, *Neptuneopsis gulchristi*, and *Volutilithes abyssicola*; WOODWARD (570).

Animal of malformed *Anodonta*; BLOOMER (55, 56).—*Yoldia limatula*; DREW (156).

## 2. SHELL AND INTEGUMENT.

Growth of shell of *Helix albolabris*; MORRELL (342).—Growth and development of shell; STEMPELL (500).—Colouration of shell; HUGHES (237).—Sculpture and banding of the shell; MARTENS (302).—Shells are dwarfed on certain soils; ROUX (448).—Colouring in *Helix*; BLACKBURN, Sci. Gossip vi, p. 280. —Structure of the shell in *Mytilus* and *Pinna*; WETZEL (555).—Permeability of integument; QUINTON (434).—'Osmotic' communication in Invertebrates; QUINTON (433).—Variation of fresh-water Molluscs; JOHANSEN (247).—Chromatophores in Cephalopoda; RABL (435).

*Eledone moschata*, *E. aldrovandi*, and *Octopus vulgaris* with dichotomous arms; PARONA (374).—Integument in *Hyalinia*; ANDRÉ (11).—Variation in *Io*; ADAMS (2).—Sinistral *Voluta scapha*; SOWERBY, P. Malac. Soc. London iv, p. 45. —Malformed *Anodonta cygnea*; BLOOMER (55, 56).—Variation of shell in *Pecten*; DAVENPORT (143).—Hinge of *Collocardia* and *Vesicomya*; SMITH (476).—Pearl in *Dreissensia*; BLADEN (48).—Three-valved *Technochiton*; SYKES (513).



## 3. MUSCULAR SYSTEM.

Muscles in Cephalopods; STEINACH (499).  
Cruciform muscle in *Tellinacea*; IHERING (240).

## 4. DIGESTIVE SYSTEM.

Radula of *Physa gyrina*; BAKER (23).—Radula of *Synaptochlela picta*; VERRILL & BUSH (537), p. 525.—Radula of *Volutidae*; DALL (134).—Radula of *Leptachatina acuminata*; GODWIN-AUSTEN in SYKES (509).—Radula of *Pomatiopsis hirasei*; PILSBRY (412), p. 12.—Jaw and radula of *Guppya hopkinsi*; PILSBRY (385).—Radula of *Turritella australis*; RANGLES (436).—Radula of *Stenopus* and *Thysanophora*; SUTER (508).—*Flammulina nigrescens*, jaw and radula; SUTER in MOELLENDORFF (339).—Radula of *Fretum suteri*; SUTER in SYKES (512).—Radula of *Littorina* and *Rissoia*; TEILMAN-FRIIS (522).—Radula of several Gastropods and Cephalopods; TEMPÈRE (523).—Finer structure of stomach in terrestrial Gastropods; MONTI (341).

## 5. CIRCULATORY SYSTEM.

On the development of the heart and pericardium in *Mytilus edulis*; AHTING (4).—Blood of snails; CAMUS (75, 76).—Arterial circulation of *Nautilus pompilius*; GRIFFIN (199).—Blood of *Helix pomatia*; PHISALIX (383).

## 6. RESPIRATORY SYSTEM.

Ciliary mechanism of branchial chamber in Pelecypods; KELLOGG (255).—Fusion of filaments in the gills of Lamellibranchs; RICE (443).

## 7. EXCRETORY AND SECRETORY SYSTEMS.

Gastric gland in Molluscs; MACMUNN (294).—Development of Kidney in *Mytilus*; AHTING (4).—Two Kidneys in *Trochus*; HALLER (213).—Kidney in the Pulmonata; SIMROTH (586).

## 8. NERVOUS SYSTEM.

Sensible nervous system in Mollusca; RETZIUS (442).—Visceral nervous system in Cephalopods and *Aplysia*; BOTTAZZI & ENRIQUES (61).—Nervous system of *Aplysia*; GUIART (208).—The origin of the nervous system in Gastropods; GUIART (210).—Nervous system of *Limnaea stagnalis*; NABIAS (347).—Nervous system of *Limax*; VERATTI (535A).

## 9. SENSORY SYSTEM.

On the sensible nervous system in Mollusca; RETZIUS (442).—Eyes of the *Pelecypoda*; HESSE (223).—The sensory cells in the oral cavity of *Helix*; SMIDT (472).—Organs of hearing in *Pterotrachea*; SOLGER (484).

## 10. GENERATIVE ORGANS.

Genitalia of *Zonites rollei*; COLLINGE (98).—Gonads in the Prosobranchs; HALLER (213).—Variation of genital organs in *Helix pomatia*; PEGOT (376).—Hermaphroditism among the *Docoglossa*; WILCOX (561).

## 11. EMBRYOLOGY.

Egg of *Purpura*; BEARD (32).—The development and fertilization of the egg of *Limax agrestis*; BYRNES (73).—Formation of the mesoblast in Mollusca; CARAZZI (81).—The first stages in the development in *Pneumodermom mediterraneum*; CARAZZI (81).—On the embryology of *Aplysia limacina* L.; CARAZZI (79–82), and MAZZARELLI (320–322).—Development of *Limnaea stagnalis*; DYBOWSKI (161).—On the development of the Cephalopoda; FAUSSEK (167).—Influence of nutrition on sex in *Mytilus* and *Patella*; GEMMIL (183).—Embryology of *Aplysia depilans*; GEORGEVITCH (184).—Egg-capsule of *Megalatractus aruanus*; HEDLEY (220).—The early development of *Planorbis*; HOLMES (234).—Maturation and fertilization in pulmonate Gastropods; LINVILLE (280).—Embryology of *Aplysia*; MAZZARELLI (322).—Young sinistral shells of *Campeloma* taken from normal dextral specimen; NYLANDER (358), p. 105.—Eggs of *Geomalacus*; ROGERS (446).—On sexual dimorphism in *Astarte*; OSTROUMOFF (368).—Eggs of *Cephalopoda*; SCHIMKEWITSCH (455).—On self-fertilization in the Pulmonata; SIMROTH (470).—‘Embryogenic condensation’ in *Pelta coronata*; VAYSSIÈRE (535).

## 12. PHYLOGENY AND CLASSIFICATION.

Phylogeny of Tectibranchs; GUIART (209).—Classification of Opisthobranchs; GUIART (207).—Phylogeny and classification of land shells; PILSBRY (396).—Phylogeny and development of *Placenticeras*; SMITH (482).

## 13. STRAY NOTES.

Rearing snails in captivity; ARMITAGE (17).—Parasite of *Acanthochites porosus*; BRUCKER & TROUËSSART, C.R. Soc. Biol. vii, p. 107.—Cross between *Limnaea stagnalis* and *L. auricularia*; CHASTER (83).—Locomotion in *Solenomya*; DREW (155).—Locomotion in *Nucula*, *Yoldia*, and *Solenomya*; DREW (157).—Effect of mineral poisons on Molluscs; GERMAIN (185).—*Helices* boring rocks; HARLÉ (216).—Effect of drought on Land Molluscs; HORSLEY, J. Conch. ix, p. 281.—Habits of *Rumina decollata*; JOHNSON (248).—Parasites of *Unionidae*; KELLY (256).—On thread-spinning Mollusca; KEW (262).—Habits of *Anisochiton discrepans*; MARTEL (299).—On *Trematodes* parasitic in Marine Mollusca; PELSENEER, C.R. Ass. France 1899, Part i, p. 262.—Habits of *Limnaea mighelsi*; WALKER (546).—Æstivation of *Epiphragmophora*; WILLIAMSON (562).

## 14. ECONOMICS.

Descriptive Catalogue of pearls and shells; ANON. (14).—Oyster-culture in Cornwall; CUNNINGHAM (119).—Effect of abundance of *Octopus* on fisheries; GARSTANG (179).—*Octopus vulgaris* very destructive to lobsters on the coast of Brittany; GUIART (211).—Oysters and Disease; HERDMAN & BOYCE (221).

B.—*DISTRIBUTION.*

## GEOGRAPHICAL.

N.B.—The numbers in brackets refer to the "Titles." A reference is thus given to each memoir containing any notice affecting the Molluscan fauna of the several geographical divisions here adopted. Synonymic notes and changes of systematic position are, however, not noticed here. References to minor notes, which are not included in the List of Titles, but which contain faunistic facts of any value, are given to the work direct.

*NON-MARINE MOLLUSCA.* [For *Marine* see p. 43.]a. *PALÆARCTIC ZONE.*

Supplement to catalogue of Norman collection; NORMAN (357).

1. *Septentrional Region.*

British Isles:—Introductory portion of account of fauna continued; TAYLOR (521): Popular Notes; PLANT (422): Notes on some land and freshwater shells; ADAMS (3).

England and Wales:—Somerset: Occurrence of *Pisidium milium*; OLDHAM, J. Conch. ix, p. 276.—Tenby: Land and freshwater shells; STUBBS (505).—Herefordshire: Occurrence of *Helix virgata*; BLAKE, J. Conch. ix, p. 270.—Hampshire and I. of Wight: Fauna; WOODWARD & ADAMS (569).—Eastbourne: Notes on shells; STUBBS, J. Conch. ix, pp. 357, 374.—Surrey: Notes on Molluscs; BULLEN, Sci. Gossip vii, p. 95.—Kent: *Vertigo substriata* at Westerham; WEBB, Sci. Gossip vi, p. 253.—Buckinghamshire: Landshells; MASEFIELD, J. Conch. ix, p. 283: Freshwater shells; BLACKBURN, Sci. Gossip vi, p. 280.—Lincolnshire: *Vertigo angustior*, etc.; TAYLOR, Naturalist 1900, p. 291: Landshells; CARTER, Naturalist 1900, p. 351: Freshwater shells at Saltfleetby; KEW, Naturalist 1900, p. 252.—Hunts: Freshwater shells; BULLEN, Sci. Gossip vi, p. 280.—Stafford: Large *Valvata piscinalis* near Dudley; COLLINGE, J. Malac. vii, p. 170: Notes on *Helices*; MASEFIELD (312): Occurrence of *Helix virgata*; MASEFIELD, J. Conch. ix, p. 343.—Warwickshire: Occurrence of *Helix rufescens*; ELLIS, J. Malac. vii, p. 170.—Lancashire: *Paludestrina jenkinsi* at Droydsden; TAYLOR (518).—*Limnæa glabra* at Sproatley; FIERKE, Tr. Hull Club i, p. 156.—Land and freshwater shells in Holderness; PETCH (378).—Shells near Tadcaster; BINNIE (43).—*Helix lapicida* near Grassington; BRIERLEY, Naturalist 1900, p. 161.—Northumberland: Land and freshwater shells; LEBOUR (276).

Scotland:—Lists of species obtained in the Lochs; SCOTT (458).—West Lothian: *Limnæa stagnalis*; GODFREY, Ann. Scott. Nat. Hist. 1900, p. 125.—Renfrewshire: Occurrence of *Testacella*; HOGG & WELLWOOD, Tr. Soc. Glasgow v, p. 467.

Ireland:—Note on *Arion ater*, var. *bocagei*; SCHARFF, Irish Natural. ix, p. 47; TAYLOR, COLLINGE, SCHARFF, t. c. pp. 106–108: *Amphipeplea glutinosa*; WELCH, Irish Natural. ix, p. 48: New varieties of land shells; ANON., Irish Natural. ix, pp. 131 & 132.—County Down: Occurrence of *Vertigo antivertigo*; WELCH (552).

Norway:—Land molluscs from Lyngor; STRAND (504).

Denmark:—*Assiminea grayana* in Jutland; SELL (461): Freshwater Mollusca; JOHANSEN (247).—Copenhagen: Freshwater shells from near; SELL (460).

Germany:—*Helix candidula* at Huy; LAESECKE (274): Freshwater shells from Stuhmer Lakes; SELIGO (459): List of slugs found in the neighbourhood of Graz; BABOR (20): Descriptive list of land and freshwater mollusca; GOLDFUSS (193): N. spp. of *Anodonta* and *Unio*; SCHRÖDER (585).—Schweinfurt: Fauna; MEINEL (324).—Schleswig: Land and freshwater shells; MERKEL, Jahresber. Schlesisch. Ges. lxxvii, Zool.-Bot. section, p. 3.—Brunswick: Occurrence of *Xerophila caperata*; KOCH, Jahresber. Ver. Braunschweig xi, p. 203.—Wurtemberg: Land and Freshwater shells; GEYER (187): Variation of *Anodonta cygnea*; BUCHNER (70).

France:—*Helix leontinei*, n. sp.; GERMAIN (186): Land shells of department of Allier; DUMAS (158).—N. spp. of *Helix*; LOCARD, Bull. Soc. malac. France ii, pp. 51–79 [1885]: Notes on fauna; MARGIER, Bull. Soc. malac. France ii, p. 93 [1885].—Basin of Seine: N. spp. of *Unio*; DROUET (157A).

French Pyrenees:—Freshwater shells; GINESTE, Bull. Soc. malac. France ii, p. 177 [1885].

Lower Pyrenees:—N. spp. of *Helix*; FAGOT, Bull. Soc. malac. France ii, pp. 273, 275 [1885].

Switzerland:—Fauna of Vierwaldstättersees, with *Pisidium clessini*, n. sp.; SURBECK (507): *Helix arinophilopsis*, n. sp.; VILLESERRE, Bull. Soc. malac. France ii, p. 15 [1885].—Fauna of Alpine Lakes; ZSCHOKKE (575).—Lake of Zurich: N. spp. of *Anodonta* and *Unio*; SERVAIN, Bull. Soc. malac. France ii, pp. 325–351 [1885].

## 2. Circum-Mediterranean Region.

South-Western Europe:—Notes on land shells; JONES (251).

S. Europe:—*Tetraspis letourneuxi*, n. gen. and sp.; HAGENMÜLLER, Bull. Soc. malac. France ii, p. 303 [1885].

Portugal:—N. spp. of *Unio*; CASTRO, Bull. Soc. malac. France ii, pp. 278–292 [1885].

Central Italy:—Notes on land shells; MARTENS (306).

Roumania:—Land and freshwater shells; JAQUET (246).

Montenegro:—Slugs, with n. spp. of *Amalia* and *Limax*; SIMROTH (467).

Dalmatia:—*Amalia dalmatina*, n. sp.; SIMROTH (467): N. spp. of *Clau-silia*; LETOURNEUX, Bull. Soc. malac. France ii, pp. 198 & 199 [1885].

Island of Capri:—List of extramarine species, with *Helix cerisi*, n. sp., BELLINI (36).

Corsica:—Slugs, with n. spp. of *Agriolimax* and *Limax*; SIMROTH (467).

Arabia:—N. spp. of *Buliminus* and *Limicolaria*; ANCEY (9).

Mesopotamia:—*Levantina nardinensis*, n. sp., KOBELT (267).

Turkey in Asia:—N. spp. of *Helix*; GALLAND, Bull. Soc. malac. France ii, pp. 232–234 [1885].

Persia:—*Planorbis persicus*, n. sp.; ANCEY (10).

N. Africa:—Notes on land shells; PALLARY, C.R. Ass. France 1899, pt. 1, p. 263.

Southwest Morocco:—Land shells, with n. spp. of *Helix*; MARTENS (307).

## 3. Central Asiatic Region.

## 4. Chinese Region.

China and Central Asia:—Land and freshwater shells with notes, several species figured, and n. spp. of *Buliminus*, *Cathaica*, *Corbicula*, *Metodiontia*, *Planorbis*, *Platypetatus*, *Plectotropis*, *Pupopsis* (n. gen.), *Satsuma* (?), *Stilpnodiscus*, *Unio*, and *Valvata*; STURANY (506).

China:—The American genera *Anculotus* and *Pleurocera* occurring in China; BAVAY (30): Note on fauna; GREDLER (197): *Nodularia cylindracea*, n. sp.; SIMPSON (464): Landshells, with new names but no diagnoses; ANDREAE (12): *Anadenus dautzenbergi*, n. sp.; COLLINGE (100): Land and freshwater shells, with *Vivipara wingatei*, n. sp.; SMITH (477): New species of *Clausilia*, *Helix*, and *Plectopylis*; ANCEY, Bull. Soc. malac. France ii, pp. 127–134 [1885].

Tibet and Setchuen, borders of:—*Euhadra* (?) *pseudocampylæa*, n. sp.; ANCEY (10).

Lake Baikal:—Notes on fauna; DYBOWSKI (160): *Ancylodoris baikalensis*, n. sp.; DYBOWSKI (162).

## 5. Japanese Region.

Japan:—New species of *Clausilia*, *Ganesella*, *Plectotropis*, and *Trishoplita*; EHRMANN (163): Notes on Helicoid landshells, with list of known species, and n. spp. of *Eulota*; GUDE (200): Further notes with n. spp. of *Chloritis* and *Eulota*; GUDE (201): New species of *Arnouldia*, *Crystallus*, *Eulota*, *Ganesella*, *Kaliella*, *Microcystis*, *Plectotropis*, *Pyramidula*, and *Trishoplita*; GUDE (206): Landshells from Iki and Tsushima, with n. spp. of *Buliminus*, *Clausilia*, *Pupinella*, and *Satsuma*; MOELLENDORFF (334): New species of *Clausilia*; PILSBRY (398): New species of *Alycaeus*, *Georissa*, *Kaliella*, *Macrochlamys*, and *Vitrea*; PILSBRY (388): New species of *Clausilia*; PILSBRY (392): *Pseudodon loomisi*, n. sp.; SIMPSON (464): New species of *Buliminus*, *Cyclotus*, *Eulota*, *Ganesella*, and *Pomatiopsis*; PILSBRY (412): *Eulota gudeana*, n. sp.; PILSBRY (414): New species of *Euconulus*, *Eulota*, *Kaliella*, and *Punctum*; PILSBRY (417): *Diplommantina uzenensis*, n. sp.; PILSBRY & GULICK (420).

Loo-Choo Islands:—List of known species of Helicoid land shells; GUDE (200): Addenda with n. spp. of *Arnouldia*, *Eulota*, *Ganesella*, and *Macrochlamys*; GUDE (201).

Bonin Is.:—Fauna; ANCEY (7): Note on *Eulota mandarina*; GUDE (201).

## 6. Atlantidean Region.

Azores:—*Buliminus* (*Napæus*) *simrothi*, n. sp.; KOBELT in MARTINI & CHEMNITZ (311): Landshells; MILNE-EDWARDS, Bull. Soc. malac. France ii, p. 313 [1885].

Madeira:—Supplement to catalogue of Norman collection; NORMAN (357).

Canary Islands:—Note on two land shells; GUDE (202).

## b. PALÆOTROPICAL AFRICAN ZONE.

## 7. Central African Region.

Central Africa:—New species of *Limicolaria*; GRANDIDIER, Bull. Soc. malac. France ii, pp. 157–161 [1885].

German East Africa:—New species of *Achatina*, *Buliminus*, and *Helix* (*Phasis*); MARTENS (301): New species of *Ennea*, *Helix*, and *Macrochlamys*; MARTENS (303).

Bagamoyo:—*Unio ledoulxianus*, n. sp.; CHARMES, Bull. Soc. malac. France ii, p. 173 [1885].

Congo Free State:—New species of *Ganomidos*, *Melania*, and *Perideriopsis*; DUPUIS & PUTZEYS (159).

## 8. West African Region.

[None.]

## 9. South African Region.

S. Africa:—Notes on slugs, with n. spp. of *Amalia*, *Apera*, and *Oopelta*; COLLINGE (104).

Transvaal:—*Achatina zebrula*, n. sp.; MARTENS (301).

Delagoa:—Land shells; BUGNION, Bull. Soc. Vaudoise xxxv, p. 278.

## 10. Malagasy Region.

Madagascar:—*Clavator vaysierei*, n. sp.; ANCEY (6): *Clavator placostyloides*, n. sp.; KOBELT (266): *Acroptychia pyramidalis*, n. sp.; SYKES (513).

Mayotte:—*Pachnodus fagotianus*, n. sp.; ANCEY, Bull. Soc. malac. France ii, p. 144 [1885].

## 11. Afro-Arabian Region.

Sokotra:—Notes on Fauna; ANCEY, Bull. Soc. malac. France ii, p. 147 [1885].

[? Sokotra]:—*Bonnanius bouvieri*, n. gen. and sp.; JOUSSEAUME (252).

## c. PALÆOTROPICAL ORIENTAL ZONE.

### 12. Indian Region.

India:—*Nanina* (*Xestina*) *theobaldiana*, n. sp.; KOBELT in MARTINI & CHEMNITZ (311).

Ceylon:—*Acaus polei*, n. sp.; COLLETT (96).

### 13. Indo-Chinese Region.

Assam:—*Sesara harmeri*, n. sp.; GUDE (203): *Spiraculum assamense*, n. sp.; FULTON (178).

Annam:—New species of *Amphidromus*; MOELLENDORFF (333): New species of *Amphidromus*, *Camænella*, *Diplommatina*, *Ennea*, *Georissa*, *Hemiplecta*, *Hypselostoma*, *Katiella*, *Lagochilus*, *Leptopoma*, *Otesia*, *Plectotropis*, and *Streptaxis*; MOELLENDORFF (335): *Unio fruhstorferi*, n. sp.; DAUTZENBERG (138).

Tonkin:—New species of *Alycaeus*, *Buliminus*, *Clausilia*, *Cremnocoelus*, *Helix*, *Lithoglyphus*, *Macrochlamys*, *Melania*, and *Stenothyrus*; BAVAY & DAUTZENBERG (31): *Plectopylis francoisi*, n. sp.; FINCHER (179): *Plectopylis lepida*, n. sp.; GUDE (205).

Penang:—*Vivipara penangensis*, n. sp.; MARTENS

14. *Indo-Malay Region.*

Sumatra:—*Atopus* (*Padangia*, n. subgen.) *schildii*, n. sp.; BABOR (21): Land and freshwater shells, with n. spp. of *Alyceus*, *Amphidromus*, *Anodonta*, *Corbicula*, *Cyclophorus*, *Macrochlamys*, *Melania*, *Pupina*, and *Unio*; MARTENS (305).

Borneo:—List of eighteen species from Kina Balu; SMITH (478): *Leptopoma* (*Trocholeptopoma*) *mittchella*, n. sp.; SMITH (474): Shells from Mount Kina Balu; HANITSCH (215).

Christmas Island:—Terrestrial fauna, with figures of all the species (*Assimineia andrewsiana*, n. sp.); SMITH (481).

15. *Philippine Region.*

Philippine Islands:—Illustrations of land shells; HIDALGO (324).

## d. AUSTRALIAN ZONE.

16. *Austro-Malayan Region.*

Celebes:—Notes on fauna; SIMROTH (471).

17. *Australian Region.*

Australia:—Notes on *Pupidae*; PILSBRY (390).

Queensland:—*Diplommatina oreadis*, n. sp.; HEDLEY (220): *Petterdiana thaanumi*, n. sp.; PILSBRY (408).

Tasmania:—Shells in Tasmanian Museum; LODDER (284).

18. *Austro-Polynesian Region.*

Mid-Pacific:—Genesis of land fauna; PILSBRY (397).

New Hebrides:—*Veronicella brunnea*, n. sp.; COLLINGE (99): *Placostylus heterostylus*, n. sp.; PILSBRY in TRYON (529): *Cyrena ingens*, n. sp.; DAUTZENBERG (137).

New Caledonia:—New species of *Bulimus* and *Helix*; EUTHYME, Bull. Soc. malac. France ii, pp. 242–257 [1885].

Loyalty Is.:—*Veronicella willeyi*, n. sp.; COLLINGE (99).

Fiji Islands:—*Veronicella gilsoni*, n. sp.; COLLINGE (102).

19. *Polynesian Region.*

Polynesia:—Notes on *Pupidae*; PILSBRY (391).

Hawaiian Islands:—Non-marine fauna, with n. spp. of *Achatinella*, *Ancylus*, *Auriculella*, *Leptachatina*, *Perdicella*, *Succinea*, and *Tornatellina*; SYKES (509).

Caroline Islands:—Non-marine Mollusca, with n. spp. of *Charopa*, *Endodonta*, *Eulota*, *Flammulina*, *Georissa*, *Opeas*, *Quadrasiella*, *Tornatellina*, and *Vertigo*; MOELLENDORFF (339).

Mariannes:—Non-marine fauna; MOELLENDORFF (339).

Pelews:—Non-marine fauna; MOELLENDORFF (339).

20. *Neozealanian Region.*

Norfolk I.:—Non-marine Mollusca, with n. spp. of *Fretum*, *Medyla*, *Microcystia*, *Omphalotropis*, *Paludestrina*, *Sitala*, *Trochonanina*, and *Vertigo*; SYKES (512).

Phillip I.:—Non-marine Mollusca, with *Fretum grayi*, n. sp.; SYKES (512).

## e. NEANTARCTIC ZONE.

21. *Patagonian Region.*

Patagonia:—*Pyramidula patagonica*, sub-fossil, n. sp.; SUTER (508).

Uruguay:—Review of fauna; CORSI (106): Occurrence of *Strophocheilus globosus*; PILSBRY (389).

22. *Chilian Region.*

[None.]

## f. NEOTROPICAL ZONE.

23. *Peruvian Region.*

Peru:—Notes on land shells, with n. spp. of *Bulimulus* and *Polygyratria*; PILSBRY (389): *Clausilia granulosa*, n. sp.; SYKES (513).

Galapagos:—Fauna, with n. spp. of *Bulimulus*, *Endodonta*, and *Vitrea*; DALL (124).

24. *Colombian Region.*

Venezuela:—New species of *Euritus* and *Nenia*; JOUSSEAUME (252).—Orinoco River: *Glabeis falsus*, n. sp.; SIMPSON (465).

Ecuador:—New species of *Nenia* and *Rhodea*; JOUSSEAUME (252): *Despina* (*Chersodespina*, n. subgen.) *cinnamomea*, n. sp.; SYKES (513): *Glandina equatoria*, n. sp.; DA COSTA (120).

U. S. of Colombia:—*Glandina floccata*, n. sp.; DA COSTA (120): *Plecochilus dalmasi*, n. sp.; DAUTZENBERG (135): New species of *Nenia* and *Rhodea*; JOUSSEAUME (252).

25. *Brazilian Region.*

Brazil:—Land shells, with n. spp. of *Pupa*, *Pyramidula*, and *Streptaxis*; SUTER (508): New species of *Psadara* and *Solaropsis*; IHERING (241): *Strophocheilus pilsbryi*, n. sp.; IHERING in PILSBRY (389): Note on land shells, with n. spp. of *Happia*, *Helicina*, and *Strophocheilus*; PILSBRY (389): *Bulimulus dukinfieldi*, n. sp.; MELVILL (325).

Bolivia:—*Pisidium boliviense*, n. sp.; STURANY (29): *Eurytus couturesi*, n. sp.; ANCEY (8).

26. *Mexican Region.*

Mexico:—Land and freshwater shells, with n. spp. of *Chondropoma* and *Unio*; PILSBRY (407): *Metostrocon mina*, n. gen. and sp.; PILSBRY (399): New species of *Anodonta* and *Spharium*; MALL



New Mexico:—*Zonitoides neomexicanus*, n. sp.; PILSBRY (404): Land shells from rejectamenta of Rivers; PILSBRY (411): Note on shells from Raton; PILSBRY (418): Mollusca from Sandia Mts. and Las Vegas; PILSBRY & COCKERELL (419).

Panama:—New species of *Glandina* and *Streptostylus*; DA COSTA (120).

Costa Rica:—*Cyclophorus underwoodi*, n. sp.; DA COSTA (120): *Bulimulus inusitatus*, n. sp.; FULTON (178): New species of *Eupera*, *Melampus*, and *Sphaerium*; MARTENS (309).

Cocos Is., Costa Rica:—Fauna, with n. spp. of *Guppya*, *Leptinaria*, and *Vertigo*; DALL (124).

Honduras:—*Nephronaias reticulatus*, n. sp.; SIMPSON (464).

Guatemala:—*Glandina iheringi*, n. sp.; PILSBRY (410): *Quadrula guatemalensis*, n. sp.; SIMPSON (464): New species of *Anodonta* and *Unio*; MARTENS (309).

Mosquito Coast:—Shell collecting notes; FLUCK, *Nautilus* xiv, p. 94.

## 27. Caribbean Region.

Cuba:—*Unio proclinatus*, n. sp.; MARTENS (309).

Bahamas:—*Cerion stevensoni*, n. sp.; DALL (130).

## g. NEARCTIC ZONE.

## 28. American Region.

United States:—Review of *Pupidae*, with *Vertigo columbiana*, n. sp.; PILSBRY & VANATTA (421): Illustrations of unfigured *Unionidae*, with n. spp. of *Lampsilis*, *Pleurobema*, *Ptychobranchus* (n. gen.), and *Quadrula*; SIMPSON (464): Distribution of *Unionidae*; SIMPSON (466).—Great Smoky Mountains: Note on fauna; FERRISS (170): Review of fauna, with n. spp. of *Gastrodonta*, *Punctum*, and *Vitrea*, and new varieties; PILSBRY (387).—Red River: Freshwater shells; FRIERSON (175).

Alabama:—*Unio hagleri*, n. sp.; FRIERSON (174).—Arkansas and Choctaw Nation: *Zonitidae*; PILSBRY (401).—Arkansas: *Lampsilis simpsoni*, n. sp.; FERRISS (169): Land shells with *Polygyra pilsbryi*, n. sp.; FERRISS (168): Notes on land and freshwater shells; PILSBRY (393).—Western Florida: Land shells; JOHNSON (250).—Florida: Occurrence of *Polygyra auriculata*; PILSBRY, *Nautilus* xiii, p. 118.—Georgia: *Unio kingii*, n. sp.; WRIGHT (571).—Illinois: Revision of *Physæ*; BAKER (23).—Indiana: On the fauna; CALL (577): Detailed account of fauna; CALL (74): Notes on some shells; CALL (578).—Kentucky: Collection of land and freshwater shells; PRICE (424).—Maine: Land shells of Kennebunkport; CLAPP (88): Land and freshwater shells from; NYLANDER (358).—Michigan: *Psidium imbecille*, n. sp.; STERKI (501).—Michigan, Illinois, Kentucky, and Iowa: *Psidium peraltum*, n. sp.; STERKI (501).—Minnesota: Shells from Heron and Eagle Lakes; STEARNS (489).—Montana: *Pyramidula elrodi*, n. sp.; PILSBRY (413).—New Jersey: Land shells of Cape May; PILSBRY (416).—New York: Shells near Rochester; BAKER (24).—Rhode Island: Freshwater shells; BAKER (22).—North Carolina: *Philomycus secretus*, n. sp.; COCKERELL (93).—Texas: Note on cave fauna; EIGENMANN, P. Amer. Ass. xlv, p. 229: Several land shells; FERRISS (168): *Helicodiscus eigenmanni*, n. sp.; PILSBRY (413).

Bermudas:—Land shells, with critical notes, and figures of several spp.; PILSBRY (384).

## 29. Californian Region.

California:—Introduced molluscs; STEARNS (495): Reprinted descriptions and notes; ORCUTT (366): *Epiphragmophora bowersi*, n. sp.; BRYANT (67): Occurrence of *Margaritana* in a water tunnel; BUTTON, *Nautilus* xiii, p. 130: *Epiphragmophora harperi*, n. sp.; BRYANT (68): Occurrence of *Vallonia pulchella*; STEARNS (494): Occurrence of *Circinaria hemphilli*; BUTTON, *Nautilus* xiv, p. 72.

Lower California:—Note on species of *Calocentrum*, with *C. eisenianum*, n. sp.; PILSBRY (394).

Lower California and neighbouring Islands:—Notes, with n. spp. of *Epiphragmophora* and *Succinea*; DALL (124).

## 30. Canadian Region.

Canada:—List of land shells; TAYLOR (519): Occurrence of *Gastrodontia lamellidens*; WALKER (548): Occurrence of *Hemphillia glandulosa*; TAYLOR (520).

Vancouver I.:—*Vertigo columbiana*, n. sp.; PILSBRY & VANATTA (421).

Newfoundland:—Occurrence of *Helix hortensis*; CLAPP, *Nautilus* xiv, p. 72.

Puget Sound:—*Ariolimax steindachneri*, n. sp.; BABOR (21).

## MARINE MOLLUSCA.

## 1. Arctic Province.

W. Greenland:—N. spp. of *Bathydoris*, *Doridoxa* (n. gen.), and *Gonieolis*; BERGH (41).

S.W. of Iceland:—N. spp. of *Atthila* (n. gen.) and *Candiella*; BERGH (41).

Franz-Josef Land:—Marine shells with *Buccinum brucei*, n. sp.; MELVILL & STANDEN (330).

Kolguev:—Marine shells; MELVILL & STANDEN (330).

## 2. Boreal Province.

Norway:—Littoral shells from Lyngor; STRAND (504).

## 3. Celtic Province.

Study of fauna continued; KOBELT (269).

British Islands:—Notes on Gastropods; MARSHALL (297).—South of England: Abundance of *Octopus*; GARSTANG (179).—*Acmæa testudinalis* on N.E. English coast; ROEBUCK, *Naturalist* 1900, p. 299.—Salcombe Estuary: Fauna; ALLEN & TODD (5).—Falmouth: Notes on fauna; VALLENTIN (531).—Hampshire & I. of Wight: Fauna; WOODWARD & ADAMS (569).—Yorkshire: *Acmæa testudinalis*; BRAIM, *Naturalist* 1900, p. 367.—Ireland: Fauna of; NICHOLS (352).—Bantry Bay: *Odostomia verticalis*, n. sp.; MARSHALL (297).—Valencia Harbour: Pelagic fauna; BROWNE (64): Opisthobranchiate Molluscs; BEAUMONT (33).—Scotland: Marine Mollusca; KNIGHT (265).—West Lothian: *Eladone cirrheae*; GODFREY, *Ann. Scott. Nat. Hist.* 1900, p. 185.—Aberdeen: *Murex simpsoni*, n. sp.; MARSHALL (296).—Firth of Forth: Occurrence of *rondeleti*; GODFREY, *Ann. Scott. Nat. Hist.* 1900.

4. *Lusitanian Province.*

Study of fauna continued; KOBELT (269).

France:—Comparison of Opisthobranchs from Mediterranean and Atlantic coasts; VAYSSIÈRE (534): Species of *Fisurella*; LOCARD (282): Marine mollusca occurring at Cancale; MARTEL (300).—Gironde: Note on *Ostrea angulata*; ROCHEBRUNE (445).—Saint-Malo: List of marine mollusca; DAUTZENBERG & DUROUCHOUX (140).

Gulf of Gascony:—*Melampus biscayensis*, n. sp.; FISCHER (171).

Portugal:—Fauna continued; NOBRÉ (354).

Mediterranean:—*Gadinia requieni*, n. sp.; LOCARD (281): Notes on shells, with *Cyclope westertundi*, n. sp., Greece; BRUSINA (65).

Corsica:—Gastropod fauna, with n. spp. of *Clathurella*, *Mangelia*, and *Nassa*; LOCARD & CAZIOT (283).

Adriatic:—Notes on Pelecypods; CHIAMENTI (85).

Oran:—Fauna, with many new varieties, and n. spp. of *Alexia*, *Columbella*, *Eulima*, and *Nassa*; PALLARY (369).

Azores:—*Bathysciadium conicum*, n. g. and n. sp.; DAUTZENBERG & FISCHER (142): New species of *Discodoris* and *Marsenia*; BERGH (38).

Azores and Madeira, between:—*Micrella dubia*, n. gen. and sp.; BERGH (38).

5. *Aralo-Caspian Province.*

Caspian Sea:—Shells from; LÖNNBERG (290).

6. *West African Province.*

Cape Verd Is.:—*Lucapinella versluisi* and *Modulus guernei*, n. spp.; DAUTZENBERG (135).

Togo:—Occurrence of *Teredo fimbriata*; MARTENS (304).

Goree:—*Turbonilla maltzani*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).

7. *South African Province.*

South Africa:—Occurrence of *Cryptoplax*; SYKES (513): *Paraplysia lowii*, n. sp.; GILCHRIST (188): *Pleurobranchæa capensis*, n. sp.; VAYSSIÈRE (533): New species of *Bullia*, *Cassia*, *Dolium*, and *Turbo*; EUTHYME, Bull. Soc. malac. France ii, pp. 237–252 [1885].

Pondoland and The Kowie:—Notes on shells with n. spp. of *Amphiperas*, *Ancilla*, *Columbella*, *Euthria*, *Gibbula*, *Mitra*, *Nassa*, *Niso*, *Terebra*, *Tritonidea*, *Trophon* (?), *Turbonilla*, and *Turritella*; SOWERBY (485).

Delagoa:—Marine shells; BUGNION, Bull. Soc. Vaudoise xxxv, p. 278.

8. *Indo-Pacific Province.*

Andaman Islands:—*Cassia booleyi*, n. sp.; SOWERBY (487).

Christmas Island:—List of marine shells; SMITH (480).

China:—New species of *Odostomia* and *Turbonilla*; CLESSIN in MARTINI & CHEMNITZ (311).

Lake Baikal:—Notes on fauna; DYBOWSKI (160): *Ancylodoris baikalensis*, n. sp.; DYBOWSKI (162).

Philippine Islands:—*Odostomia manilensis*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).—Cebu: New species of *Cyclostrema*, *Glyphostoma*, *Leptothyra*, *Marginella*, *Mitra*, *Mucronalia*, *Natica*, *Ocenebra*, *Ringicula*, and *Vitrinella*; SOWERBY (486).

Sumatra:—*Parthenia benguelensis*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).

Amboina:—*Oscaniopsis amboinei*, n. sp.; VAYSSIÈRE (533): *Turbonilla subulata*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).

Timor:—*Turbonilla martensii*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).

Hawaiian Islands:—*Cypræa kauilani*, n. sp.; KENYON (261).

Laysan Island:—*Samla annuligera*, n. gen. and n. sp.; BERGH (40).

Pacific Ocean:—*Chelidonura plebeia*, n. sp.; BERGH (39).

Ralum I.:—*Phyllaplysia pacifica*, n. sp.; BERGH (39).

Ralik Islands:—*Turbonilla fintshi*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).

Fiji:—Occurrence of *Scala revoluta*; HEDLEY (219).

New Caledonia:—New species of *Cerithiopsis* and *Natica*; EUTHYME, Bull. Soc. malac. France ii, pp. 239, 255 [1885].

Torres Straits:—New species of *Couthouyia*, *Scalenostoma*, and *Teinostoma*; HEDLEY (220).

Queensland:—New species of *Leucotina*, *Liotia*, and *Scalenostoma*; HEDLEY (220).

### 9. Australo-Zealandic Province.

South Australia:—New species of *Ischnochiton* and *Callochiton*; ASHEY (18): *Chiton oruktus*, n. sp.; MAUGHAN (315): New species of *Eulima*, *Marginella*, *Odontostomia*, and *Scalaria*; TATE & MAY (516).

Victoria:—Notes on some species of *Murex*; KENYON (260): New species of *Erato*, *Marginella*, *Natica*, *Odostomia*, *Stylifer*, and *Turbonilla*; PRITCHARD & GATLIFF (430): New species of *Cithara*, *Clathurella*, *Drillia*, *Liotia*, *Mangilia*, and *Mitromorpha*; PRITCHARD & GATLIFF (427): Review of fauna continued, with critical notes; PRITCHARD & GATLIFF (428, 429): Note on marine mollusca; GATLIFF (180): New species of *Eulima*, *Odontostomia*, *Rissoia*, and *Scalaria*; TATE & MAY (516).

N. S. Wales:—Notes on fauna, with n. spp. of *Fossarus*, *Menon* (n. gen.), *Puncturella*, and *Seila*; HEDLEY (220): Occurrence of *Turricula scalariformis*; HEDLEY (218).—Off Sydney (410 fthms.): New species of *Turritella*; DONALD (151).—Port Jackson: New variety of *Turritella quadrata*; DONALD (151).

Bass Strait:—New species of *Turritella*; DONALD (151).

Tasmania:—New species of *Cadulus*, *Cantharus*, *Carditella*, *Cyamium*, *Cyclostrema*, *Donovania*, *Eulima*, *Lampusia*, *Marginella*, *Odontostomia*, *Rissoia*, *Rissopsis*, *Scalaria*, *Syrnola*, *Thylacodes*, and *Turritella*; TATE & MAY (516): Shells in Tasmanian Museum; LODDER (284).

New Zealand:—Two new species of *Eolidiella*; BERGH (40).

### 10. Japonic Province.

Japan:—New species of *Euthria*, *Siphonalia*, and *Voluta*; SOWERBY (488): New species of *Odostomia* and *Turbonilla*; CLESSIN in MARTINI & CHEMNITZ (311).

### 11. Aleutian Province.

Canada:—Fauna of Pacific Coast; TAYLOR (519).

Vancouver Island:—*Phyllaplysia taylori*, n. sp.; DALI. (131): *Archidoria nyctea*, n. sp.; BERGH (40).

Sitka:—*Odostomia sitkaensis*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).

Bering Strait :—*Macoma krausei*, n. sp. ; DALL (122).

Alaska :—New species of *Macoma* ; DALL (122).

### 12. Californian Province.

Western North America :—Review of *Tellinidae* ; DALL (122) : Review of *Cardidae* ; DALL (123) : Notes on species of *Saxidomus* ; STEARNS (493).

California :—Introduced molluscs ; STEARNS (495) : Varieties of *Haliotis* ; STEARNS (490) : Reprinted descriptions and notes ; ORCUTT (366) : *Capulus californicus*, n. sp. ; DALL (125) : Occurrence of *Myoforceps aristatus* near San Diego ; BUTTON, Nautilus xiii, p. 131 : *Murex petri*, n. sp. ; DALL (128) : *Pleurobranchus californicus*, n. sp. ; DALL (132).—San Diego Bay : Note on fauna ; KELSEY (257).

California and Lower California :—New species of *Tellina* and *Macoma* ; DALL (122).

### 13. Panamic Province.

Mexico :—*Tellina macneilii*, n. sp. ; DALL (122).

Panama :—*Odostomia panamensis*, n. sp. ; CLESSIN in MARTINI & CHEMNITZ (311) : New species of *Macoma* and *Tellina* ; DALL (122).

Colombia :—Marine shells ; BAVARIA, PRINCESS OF (29).

Guatemala :—Occurrence of *Purpura coronata* ; PILSBRY, Nautilus xiii, p. 130.

Galapagos :—*Cypræa galapagensis*, n. sp. ; MELVILL (326).

### 14. Peruvian Province.

Peru :—Marine shells ; BAVARIA, PRINCESS OF (29).

Chili :—Marine shells ; BAVARIA, PRINCESS OF (29).

### 15. Antarctic Province.

Patagonia :—New species of *Chlorostoma* ; PILSBRY (403).

### 16. Argentine Province.

Argentina :—*Sistrum nicocheanum*, n. sp. ; PILSBRY (409).

Uruguay :—Review of fauna ; CORSI (105).

Rio La Plata :—*Tellina iheringi*, n. sp. ; DALL (122).

### 17. Caribbean Province.

Caribbean Province :—Collection from various localities, with notes ; DAUTZENBERG (135).

Texas :—New species of *Tellina* and *Macoma* ; DALL (122).

Gulf of Mexico :—*Tellina georgiana*, n. sp. ; DALL (122).

St Thomas :—*Tellina georgiana*, n. sp. ; DALL (122).

Guadeloupe :—*Tellina colorata*, n. sp. ; DALL (122).

Jamaica :—*Diplodonta (Phlyctiderma) puncturella*, n. sp. ; DALL (121) : *Turbonilla pulchra*, n. sp. ; CLESSIN in MARTINI & CHEMNITZ (311).

Cuba :—*Turbonilla gracilis*, n. sp. ; CLESSIN in MARTINI & CHEMNITZ (311).

West Indies :—*Turbonilla rentsii*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (311).

Venezuela :—Marine shells; BAVARIA, PRINCESS OF (29).

Off Venezuela :—New species of *Chlamys*, *Drillia*, *Nucula*, *Pecten*, and *Phos*; DAUTZENBERG (135).

N. coast of Colombia :—New species of *Chlamys*, *Drillia*, *Leda*, *Nucula*, *Pecten*, and *Phos*; DAUTZENBERG (135).

Brazil :—*Tellina flagellum*, n. sp.; DALL (122): New species of *Odostomia* and *Turbonilla*; CLESSIN in MARTINI & CHEMNITZ (311): *Fissurella henseli*, n. sp.; MARTENS (308).

Eastern South America :—*Mytilidae*; IHERING (239).

## 18. Transatlantic Province.

Eastern North America :—Review of *Cardiidae*; DALL (123): Review of *Tellinidae*; DALL (122).

Virginia :—*Macoma phenax*, n. sp.; DALL (122).

North Carolina :—*Tellina americana*, n. sp.; DALL (122).

Florida :—New species of *Tellina* and *Macoma*; DALL (122): *Murex marcoensis*, n. sp.; SOWERBY (487): *Calliostoma veliei*, n. sp.; PILSBRY (406).

Bermudas :—Nudibranchs and Tectibranchs, with n. spp. of *Aplysia*, *Chromodoris*, *Coryphella*, *Doris*, *Lamellidoria*, and *Pleurobranchopsis* (n. gen.); VERRILL (536): Marine molluscs, with n. spp. of *Bulla*, *Cæcum*, *Cerithiopsis*, *Eulima*, *Lucina*, *Odostomia*, *Rissoa*, *Scala*, *Siphonaria*, *Tornatina*, and *Turbonilla*; VERRILL & BUSH (537): *Tellina promera*, n. sp.; DALL (122).

## GEOLOGICAL.

N.B.—The remarks given at the beginning of the preceding section, p. 36, also apply here.

On *Avicula reticulata*, Hisinger; PHILIPPI (382): Stratigraphical distribution of *Ostrea (Gryphæa) vesicularis*; MAYER-EYMAR (318): Changes in two specific names; VINCENT (538): Changes in nomenclature; COSSMANN (107): List of types referred to in papers by Whitfield, with notes; WHITFIELD (557): Land and freshwater fauna of British Islands; TAYLOR (521): Freshwater fauna from Cuvilly (Oise), with several n. spp.; LERICHE (277): Fauna from near Giessen, with n. spp.; LOTZ (293): List of freshwater mollusca from the neighbourhood of Komárom, Hungary; HORUSITZKY, Mt. Ungar. geol. Ges. xiii, Hft. 3, pp. 10 & 11: Conrad's types of Syrian fossils; BEECHER (34): North American Palæontology for 1897 & 1898; WEEKS (549 & 550): Fossil land shells from Oahu, Hawaiian Islands; HITCHCOCK (230), pp. 54 & 55.

## 1. POST-TERTIARY.

Loess fossils from Europe; ANDREAE (12).—Stratigraphical position of *Corbicula fluminalis*; RUTOT (451).

British Isles :—Pleistocene non-marine Mollusca of Ilford; KENNARD & WOODWARD (259).—Shells from Thames Valley gravels; STOPES (502, 503).

Norway :—Mollusca from Moraine near Bergen; REKSTAD (441).

France :—Freshwater holocene mollusca from Wissant; LERICHE (278).

Spain :—New species of *Helix* from Valencia; KOBELT (268).

Italy :—Note on shells from Nizetti; SCALIA, Boll. Acc. Gioen. lxiii, pp. 16 & 17.

Bulgaria:—Mollusca from Alluvial deposits near Rustschuk; TOULA (528), pp. 31 & 32.

Asia:—Loess land shells from China; ANDREAE (12).—Fossils from Central Asia with *Opeas schensiense*, n. sp.; STURANY (506).—Quaternary Mollusca from the reef-limestones of Christmas Island; NEWTON (351).—Quaternary fossils from Java; MARTIN (310).

Africa:—New genera of slugs from Algeria; HAGENMÜLLER, Bull. Soc. malac. France ii, pp. 305–311 [1885]: Pleistocene Mollusca from the Raised Beach Deposits of the Red Sea, with *Capituna ruppeli*, n. var. *barroni*; NEWTON (349).

North America:—Mollusca associated with *Mastodon* remains in Ontario; STEARNS (492).—Fossil land shells of John Day Region, Eastern Oregon; STEARNS (491).—Shells of Iroquois Beach; COLEMAN (95).

## 2. TERTIARY.

*Ostrea (Gryphæa) angulata*, Lk., passes from Cretaceous into Tertiary rocks; MAYER-EYMAR (319).—Notes on *Melanopsis parreyssi*; BRUSINA (65).—Note on *Ostrea inaspecta* Desh.; VINCENT (540).

Europe:—Lists of land and freshwater shells from the Tertiary basin of Aquitaine; RAULIN (438).—Fauna of Faluns of Touraine, with many n. spp.; IVOLAS & PEYROT (243).—Notes on fossils near Chambery; DOUXAMI & REVIL (154).—Pelecypoda from the Older Tertiary of the South-east of France; OPPENHEIM (360).—Sinistral *Helix moguntina* near Wiesbaden; RIEMENSCHNEIDER (444).—Fossils from Wismar; GEINITZ (182).—Fossils from Belluno; LONGHI (287).—Pelecypoda of Piedmont and Liguria continued; SACCO (452).—New species of *Chlamys* and *Pecten* from the nummulitic rocks in the neighbourhood of Subiaco in the province of Rome; VIOLA (541).—*Perna (Pachyperna*, n. subgen.) *laverdani*, n. sp., from the Venetian older tertiary; OPPENHEIM (359).—Tertiary fossils from neighbourhood of Rustschuk, Bulgaria; TOULA (528), pp. 32–36.

Asia:—Fossils from Java; MARTIN (311).—Notes on Tertiary Geology of Oahu; DALL in HITCHCOCK (230), pp. 57–60.

Africa:—Neogene Mollusca, chiefly *Pectinidae*, from Egypt; BLANCKENHORN (53).—Lists of Fossils from Tertiary of Egypt; BLANCKENHORN (49).—Lists of Mollusca from the Palaeogene of Egypt; BLANCKENHORN (51).

North America:—Pelecypods of Florida continued, with new subgenera, sections, and n. spp. (a few from West Indies); DALL (121).

Australia:—Fossils from well-bore near Wellington, S. Australia; TATE (515).

Kerguelen Island:—New species of Molluscs; TATE (514).

Pliocene:—Crag Mollusca; HARMER (217).—List of Pliocene fossils from the neighbourhood of Viterbo; STEFANO & SABATINI, Bol. Com. geol. Ital. xxx, p. 349. —Notes on fossils from Vaucluse; CHATELET (84).—List of Pliocene shells from Castellarquato; LEVI (279).—New species of Gastropods from Karikal; COSSMANN (106).—*Lima hamlini*, n. sp., from California; DALL (127).—Chitons from Florida; JOHNSON (249).—Notes on known forms with n. spp. of Gastropods from Wanganui; MURDOCH (346).

Miocene:—On *Pecten bessi*, auct.; OPPENHEIM (364).—Fauna near St Florian, with n. spp.; BAUER (26).—Fossils from Hérault; MIQUEL (332).—Land shells from near Steinheim; MILLER (331).—Fossils from Mähren; PROCHAZKA (431, 432).—Fauna of strata near Wetzelsdorf; HOLLER (233).—*Pectinidae*, with *P. fucini*, n. sp., from Calabria; UGOLINI (530).—Large *Lucinidae* of the Macigno in Apennines; OPPENHEIM (361).—Notes on Miocene of Apennines; STEFANI (498).—On the large *Lucina* and the

age of the "Miocene" Macigno-Mergel of the Appennines; OPPENHEIM (365).—Molluscs from the Appennines, with several n. spp.; NELLI (348).—Mollusca from Umbria; VERRI & ANGELIS D'OSSAT, Boll. Soc. geol. Ital. xix, pp. 261-273.—Two new Pectens, *P. bassanensis* and *balestrai*, from the Miocene of Bassano; OPPENHEIM (362).—Mollusca from Castelnuovo; DEL BUE, Riv. ital. Pal. vi, pp. 121-136.—Fossils from Camerino; MARIANI, Riv. ital. Pal. vi, pp. 95-97.—Occurrence of *Melanopsis martini* in the Tegel of Wolfsdorf, Austria; SCHUBERT (456).—Mollusca from Upper Austria; ABEL (1).—Pelecypoda and Gastropoda from the beds with *Venus konkensis* on the river Konka, with several n. spp.; SOKOLOV (483).—Fauna of Burmah; NOETLING (355).—Fauna of 'Patagonian Formation,' with n. spp.; ORTMANN (367).

Oligocene:—Notes on European fossils; GIRAUD (190).—Lists of Middle Oligocene Mollusca from the neighbourhood of Paris; DOLLFUS, Bull. Soc. geol. France xxviii, pp. 109-154.—Tongrian fossils from Limbourg; VINCENT (587).—Lists of Aquitanian Mollusca from the neighbourhood of Acqui; ALESSANDRI, Boll. Soc. geol. Ital. xix, pp. 549-554.—Mollusca from the Venetian Alps, with several n. spp.; OPPENHEIM (363).—Mollusca from the Schylthal beds, with *Cyrena magnidentata*, n. sp.; BLANCKENHORN (50).—Note on Algerian *Helices*; PALLARY (370).

Eocene:—Many n. spp. of Gastropods from Lower Loire; COSSMANN (109).—Fauna of Paris Basin commenced with n. genn. and n. spp.; COSSMANN (580, 581).—Mollusca from Cotentin with many n. spp.; COSSMANN & PISSARRO (112).—List of Mollusca from the brackish water sparnacian deposits of Belgium; LERICHE, Ann. Soc. geol. Nord xxviii, pp. 280-283.—On the 'Rhyncholites' from the Belgian Eocene; VINCENT (539).—Mollusca from North Moldavia, with n. spp.; ATHANASIU (19).—*Kerunia cornuta*, n. g. and sp. from Egypt; MAYER-EYMAR (317).—*Ampullaria (Lanistes) bolti* from Dimé, Lake Fayoum, Egypt; MAYER-EYMAR (316).

### 3. SECONDARY.

Cephalopods with *Perisphinctes taramellii*, n. sp., from Lombardy; MARIANI (295).

Cretaceous:—Synopsis of Neocomian Ammonites; SIMIONESCU (463).—Geographical distribution of *Rudistes*; DOUVILLÉ (153).—Lamellibranchiata with *Modiola (Brachydontes) vectiensis*, n. sp.; WOODS (567).—*Caprina* in the Urganian; PAQUIER (372).—*Rudistes* in the Urganian; PAQUIER (371).—Lists of fossils from Wealden and Purbeck-Wealden; DAWSON (144).—List of Mollusca from the White Chalk; ROWE (449), pp. 364-366.—New variety of *Caprina schiosensis* Boehm; LONGHI (289).—List of Chalk Mollusca from the Rochester, Gravesend, and Croydon areas; DIBLEY (147), pp. 492-495.—Greensand Fossils from Drift-Beds at Moreseat, Cruden, E. Aberdeenshire; MITCHELL, Tr. Edinb. geol. Soc. vii [1897], pp. 277-285.—Lists of fossils from the S.E. France; PAQUIER (373).—New species of Gastropods from France; COSSMANN (108).—Fossils from Valangin; BAUMBERGER & MOULIN (28).—Mollusca from the Maritime Alps; RIAZ, Bull. Soc. geol. France xxviii, pp. 764-771.—Neocomian mollusca from Languedoc; ROMAN, Bull. Soc. geol. France xxviii, pp. 772-779.—Neocomian Ammonites from France, with n. spp. of *Hoplites*; SIMIONESCU (462).—Neocomian Ammonites from the Jura; BAUMBERGER (27).—Lists of Fossils from Portugal; CHOFFAT (86).—Mollusca from Holland with several n. spp.; VOGEL (588).—Pelecypods and Gastropods from the Neocomian of Germany and Holland, with many n. spp.; WOLLEMAN (566).—Occurrence of *Aucella keyserlingi* in Germany; WOLLEMAN (565).—Fossils from Germany; WOLLEMAN, Jahresber. Ver. Braunschweig xi, p. 62.—Molluscs in Brunswick; WOLLEMAN (563, 564).



—Fossils from neighbourhood of Brunswick; WOLLEMAN, Jahresber. Ver. Braunschweig xi, p. 65.—Fauna of Brunswick; BODE (57).—Pelecypoda from the valley of the River Leitzach; IMKELLER, Zeitschr. Deutsch. geol. Ges. lii, pp. 380-387.—Mollusca from the Siebenburgen with *Acanthoceras athleta*, n. sp.; BLANCKENHORN (52).—Fossils from Pardubice and Prelouc; ZELISKO (574).—Mollusca from Bulgaria, with a n. sp. of *Nerinea*; TOULA (528), pp. 36-47.—Fossils from River Eger; ZAHALKA (572, 573).—Gastropoda and Pelecypoda from Lebanon and Carmel, with *Hamlinia*, n. g., and several n. spp.; BÖHM (59).—Fossils from the Astrachan Steppes; REHBINDER (440).—Fossils from Java; MARTIN (310).—Lists of Fossils from Egypt; BLANCKENHORN (49).—Lists of fossils from the Lower Cretaceous of Algeria, with some new but undescribed spp. of Cephalopoda; BLAYAC (54).—Mollusca from Lower Cretaceous of Matmatas (Algeria); FICHEUR, Bull. Soc. geol. France xxviii, pp. 559-589.—Mollusca from German East Africa, with several n. spp.; MÜLLER (345).—Lower Cretaceous *Gryphaea* of the Texas region, with n. spp.; HILL & VAUGHAN (225).—*Rudistes* from Mexico and Texas, with a n. sp.; DOUVILLÉ (152).—*Placentoceras pacificum*, n. sp., California; SMITH (482).—Shells from Los Angeles, Cal.; STEARNS (496).—Lists of Mollusca from the Lower Cretaceous of Kansas; GOULD, Amer. Geol. xxv, pp. 10-40.—*Lima hamlini*, n. sp., described as Pliocene but may belong here; DALL (127).

Jurassic:—Fossils in Cheltenham College Museum; BUCKMAN (69).—Note on *Ammonites*; ROTHPLETZ (447).—Note on *Ammonites polygonius* and *A. discoides*; CRICK (118).—Fauna of Cape Flora, Franz Josef Land, with n. spp. [principally Cephalopoda]; POMPECKJ (423).—Lists of fossils from the S.E. France; PAQUIER (373).—Cephalopoda from Lombardy, with several n. spp.; DOMENICO DEL CAMPANA (150).—Mollusca from the province of Brescia, with n. spp. of *Ammonites*; BETTONI (42).—Mollusca from German East Africa, with several n. spp.; MÜLLER (345).—Fossils, chiefly Jurassic, from East Indian Archipelago; BOEHM (58).—Mollusca from Borneo, with n. spp.; VOGEL (542).—A North American epicontinental sea of Jurassic age; LOGAN (286).—Fauna, with n. spp., from Wyoming; LOGAN (285).

Oolite:—*Ammonites* from the zone of *Aspidoceras acanthicum*, with some n. vars.; CANAVARI (78).—*Nautilus truncatus*, Sowerby is from the Cornbrash; CRICK (116).—Molluscs from France; GIRARDOT (189).—Bathonian mollusca from Saint-Gaultier (Indre), with several n. spp.; COSSMANN (110).—Bathonian Gastropods from Saint-Gaultier, with *Ochetochilus*, n. g., *Mesospira*, n. subg., and several n. spp.; COSSMANN (111).—*Æcoptychius christoli* from the Oxfordian of Ardèche; ANON., Trav. Lab. Geol. Grenoble v, p. 45, fig.—Mollusca from the *sowerbyi*-zone, Basle; STRÜBIN, Eclog. geol. Helvet. vi, pp. 337-340.—Pelecypoda from the Upper Bajocian of Basle, with n. spp. of *Lima* (*Plagiostoma*); GREPPIN (198).—List of fossils, chiefly Cephalopoda, from the Oxfordian of Neuchâtel; ROLLIER & TRIBOLET, Eclog. geol. Helvet. vi, p. 345.—Oxfordian Mollusca from the Jura lédonien, with several n. spp.; LORIOL (292).—New species of *Hoplites* from Central Appennines; CANAVARI (77).—Fossils from the Dogger of the Fläschberg, with several new unnamed species; LORENZ (291).—Swabian *Aucellæ*; HUENE (236).—Lists of fossils from South-eastern Wyoming; KNIGHT, Bull. Geol. Soc. Amer. xi, pp. 385 & 386.

Lias:—List of fossils from Lincoln; WALTON, Tr. Hull Geol. Soc. v, pp. 18-21.—*Ammonites* from Central Appennines in Museum of Pisa; FUCINI (177).—Middle [upper] Liassic *Ammonites* from the Central Appennines; FUCINI (176).—*Ammonites* from the Toarcian of Umbria; BELLINI (35).—New species of *Psiloceras* from Swabia; HOLLAND (232).

Trias:—List of recent works treating upon Triassic Cephalopoda; TORNQUIST (524).—On the genus *Mysidiopoda*, with a n. sp.; BITTNER

(45).—On the genera *Pseudomonotis* and *Pleuronectites*; SALOMON (453).—Upper Triassic Cephalopoda; MOJSISOVICS (340).—Post-triassic relations of the genus *Mysidioptera*; BITTNER (44).—*Ceratites subnodosus*; TORNQUIST (525).—*Trachyleura triado-marchica*, n. g. and sp. of *Chitonidae* from the Muschelkalk of Rüdersdorf; JAEKEL (244).—Cephalopoda from the Muschelkalk near Hallstatt, with *Arthaberites*, n. g., and several n. spp.; DIENER (148).—Fauna of the Pachycardientuffe of the Seiser Alp in Tyrol, with many new undescribed spp.; BROILI (62).—List of Mollusca from the Upper Cassian Zone in Falzarego Valley, South Tyrol; GORDON (194).—Mollusca from the Tyrolean Alps; GEYER, Verh. geol. Reichsanst. 1900, pp. 119–141.—Cephalopoda from the Muschelkalk near Innsbruck; BITTNER, Verh. geol. Reichsanst. 1900, pp. 208 & 209. —List of Upper Cassian Mollusca from S. Tyrol; OGILVIE-GORDON, Verh. geol. Reichsanst. 1900, pp. 308 & 309. —Lists of fossils from the black *Tropites*-limestone near San Stefano; GEYER, Verh. geol. Reichsanst. 1900, pp. 355–370. —Mollusca from the Sturia-Kalk, with n. spp.; TORNQUIST (526).—*Gymnites* from near Lorenzago, with n. spp.; LONGHI (288).—Gastropods of 'Esino-kalke' and 'Marmalatakalke', with n. genn. and many n. spp.; KITTL (263).—*Megalodus* from the Upper Trias of Bakony (Hungary), with n. spp.; HOERNES (231).—Cephalopods from Bakony; DIENER (149).—*Myophoria inflata* in the Swabian Rhætic; BENECKE (37).—New var. of *Ceratites subnodosus* from Roumania; TORNQUIST (527).—Mollusca from China, with several n. spp.; KOKEN (271).—Werfener fossils in the Salt Range, India; WAAGEN, Centrbl. Min. 1900, pp. 285–288. —*Otoceras* beds in India; NOETLING, Centrbl. Min. 1900, pp. 216 & 217. —Lamelli-branchiata from the Himalayas, with many n. spp.; BITTNER (47). —*Otoceras* from the Salt Range, India; NOETLING (356).—Mollusca from East Siberia, with many n. spp.; BITTNER (46).—Pelecypods from Malay Peninsula, with n. spp.; NEWTON (350).—*Anoplophora wilbrahamensis*, n. sp., Massachusetts; EMERSON (164).

#### 4. PRIMARY.

Palæozoic:—*Pholadella radiata* from Parana; KAYSER (253).—Mollusca from Poland, with n. spp.; GÜRICH (212).—Cephalopoda and Gastropoda from Upper Palæozoic rocks of Russia, with *Tuberculopecten*, n. g., and many n. spp.; JAKOWLEW (245).—New species of Pelecypods and Gastropods from the Lower Burlington Limestone, Missouri; ROWLEY (450), pp. 267 & 268.

Permian:—Figures of Mollusca from New Mexico; HERRICK (222).

Permo-Carboniferous:—Anthracolithic Mollusca from Balia Maaden in Asia Minor, with several n. spp.; ENDERLE (165).—New Australian Pelecypods, with *Stutchburia*, n. gen.; ETHERIDGE (166).

Carboniferous:—On *Ephippioceras clitellarium* and *E. costatum*; CRICK (117).—New Cephalopod, *Pleuromutilus* ? *scarlettensis*, n. sp.; REED (439).—Pelecypoda, with n. spp. of *Allorisma*, *Sanguinolites*, and *Solenopsis*; HIND (228).—Fauna of the Millstone Grit and Coal Measures in S. Wales; STRAHAN & GIBSON, Mem. geol. Surv. U. K. 232, pp. 48, 86 & 87. —Mollusca from Northumberland; SHARMAN & NEWTON in GUNN, Geol. Belford, &c. (Mem. geol. Surv. U. K.), pp. 121–132. —*Pleuromutilus nodoso-carinatus*, Harrogate, Yorkshire; G. P[AVL], Yorks. Weekly Post, 13 Jan. 1900, p. 10, fig.—*Palæoneilo carbonifera*, n. sp., from Yorkshire; HIND (228).—*Scaldia minuta*, n. sp., Staffordshire; HIND (227).—Fauna of South Pennine District; HIND (226).—Gastropods in a Lepidodendron from Craighleith Quarry, Edinburgh; BROWN (63).—Occurrence of Limestone Fossils at Viewforth, near Largo, Fife; KIRKBY, Tr. Edinb. geol. Soc. vii [1899], pp. 488–493. —Cephalopoda from Ireland, with *Meso-*

*chasmoceras*, n. g., and n. spp. of *Asymptoceras*, *Calonautilus*, *Discioceras*, *Phacoceras*?, *Stroboceras*, *Thrinoceras*, *Triboloceras*, and *Vestinautilus*; FOORD (173).—Catalogue of Mollusca from North America; WELLER (554).—Note on Mollusca of Narragansett Basin; PACKARD, P. Amer. Ac. xxxv, p. 400.—Mollusca from the Yellowstone National Park; GIRTY (191), pp. 571–576.—Lists of Mollusca in the Kinderhook beds at Burlington, Iowa; WELLER (553).—List of Mollusca from New Mexico; HERRICK & BENDRATT, Amer. Geol. xxv, p. 242.

Devonian:—Suture-lines of some Upper Devonian *Goniatites* from Germany; CRICK (118).—*Pteroconus mirus*, Hinde, from North Cornwall, is a Cephalopod; WHIDBORNE, Geol. Mag. 1900, p. 239.—Cephalopoda from Cornwall; CRICK (114).—List of Mollusca from l'Ille-et-Vilaine; LEBESCONTE, Bull. Soc. geol. France xxviii, p. 90.—Note on the horizon with *Anarcestes lateseptatus* of l'Ille-et-Vilaine; BARROIS (25).—Mollusca from the Famennian of Belgium; DESTINEZ (146).—*Jovellania triangularis* in the Middle Devonian of the Eifel; KAYSER (254).—Mollusca from Wisconsin; MONROE, J. Geol. viii, p. 314.—Gastropoda from the Yellowstone National Park; GIRTY (191), pp. 505–507.—Lists of Fossils from the Lower Helderberg and Oriskany Formations; SCHUCHERT, Bull. Geol. Soc. Amer. xi, pp. 241–332.

Silurian:—List of Upper Silurian Mollusca from S. Wales; STRAHAN, Mem. geol. Surv. U. K. 249, 1899, pp. 12–15.—Fauna of Baffin Land, with n. spp.; SCHUCHERT (457).—*Pterinea lindströmi* and *P. damesi*, n. spp. from the Upper Silurian, Gotland; PHILIPPI (381).—Lower Silurian Mollusca from Middle Bohemia; ŽELIZKO, Verh. geol. Reichsanst. 1900, pp. 89 & 90.—Fossils from the Manlius limestone of Erie County, New York; GRABAU (195), pp. 370 & 371.—New species of Mollusca from the Calceiferous of the Mohawk Valley; CLELAND (89).

Cambrian:—List of Mollusca from the Stockingford Shales; FOX-STRANGWAYS, Geol. Country between Atherstone and Charnwood Forest (Mem. geol. Surv. U. K.), p. 14.—Etcheminian fauna of Newfoundland, with n. spp.; MATTHEW (313).—Etcheminian Fauna of Smith Sound, Newfoundland, with n. spp.; MATTHEW (314).—*Raphistoma* (?) *kelliensis*, n. sp., Newfoundland; MATTHEW, Tr. R. Soc. Canada v, sect. iv, p. 70.—Fossils from the Yellowstone National Park; WALCOTT (543), pp. 453 & 454.

### III. SYSTEMATIC.†

#### MOLLUSCA IN GENERAL.

General anatomy of Mollusca; LANG (275).

General account of the Mollusca; KORSCHULT & HEIDER (272).

Notes on sculpture and banding of the shell; MARTENS (302).

On the gastric gland; MACMUNN (294).

Derivations of Leach's generic names; KNIGHT (264).

### I. CEPHALOPODA.

Cephalopoda, eggs of; SCHIMKEWITSCH, Zeitschr. wiss. Zool. lxxvii, pp. 491–528; lxxviii, pp. 478 & 479.

Radula of Cephalopoda; TEMPÈRE (523).

Visceral nervous system in Cephalopods; BOTTAZZI & ENRIQUES (61).

---

† This sign is prefixed to references relating to fossil forms.

Cephalopoda, development; FAUSSEK, Mt. Stat. Neapel xiv, pp. 83-237, figg.  
Fossil Cephalopods in Rugby Museum; CUMMING (113).

## DIBRANCHIATA.

- Chiroteuthopsis*, n. gen. for *C. grimaldii*, Joubin; PFEFFER, Jahrb. Hamburg. Anst. xvii, Beiheft ii, p. 187.  
*Compsoeuthis*, n. gen. for *C. lönnbergi*, n. sp. [not described]; PFEFFER, t. c. p. 167.  
*Hensenoteuthis*, n. gen. for *H. joubini*, n. sp. [not described]; PFEFFER, t. c. p. 193.  
*Heteroteuthis*, on the genus, with anatomy; STEENSTRUP (497).  
*Histiopsis*, Hoyle, renamed *Hoyleia*, q.v.  
*Hoyleia*, n. n. for *Histiopsis*, Hoyle, nom. preocc.; COSSMANN, Rev. paléozool. iv, p. 44.  
†*Kerunia*, n. g. for *K. cornuta*, n. sp. from the Eocene of Egypt; MAYER-EYMAR, Eclog. geol. Helvet. vi, p. 120.  
*Lycoteuthis*, n. gen. for *L. jattai*, n. sp. [not described]; PFEFFER, Jahrb. Hamburg. Anst. xvii, Beiheft ii, p. 161.  
*Meleagroteuthis*, n. gen. for *M. hoylei*, n. sp. [not described]; PFEFFER, t. c. p. 170.  
*Micabralia*, n. gen. for *M. lineata*, Goodrich; PFEFFER, t. c. p. 167.  
*Rossia*, on the genus; STEENSTRUP (497).  
*Sepiolo*, on the genus; STEENSTRUP (497).  
*Spirula*, live specimen figured; CHUN (87), p. 518.  
*Stigmatoteuthis*, n. gen. for *S. hoylei*, Goodrich; PFEFFER, Jahrb. Hamburg. Anst. xvii, Beiheft ii, p. 170.  
*Symplectoteuthis*, n. gen. for *S. ovalaniensis*, Lesson; PFEFFER, t. c. p. 180.  
*Taonidium*, n. gen. for *T. suhmi*, Hoyle; PFEFFER, t. c. p. 192.  
*Teleonychoteuthis*, n. gen. for *T. krohni*, Verany; PFEFFER, t. c. p. 158.  
*Tetonychoteuthis*, n. gen. for *T. dussumieri*, D'Orb.; PFEFFER, t. c. p. 161.  
*Thelidoteuthis*, n. gen. for *T. polyonyx*, Troschel; PFEFFER, t. c. p. 167.

## AMMONEA.

- †*Acanthinites*, n. subg. of *Cyrtopleurites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 517 [1893].  
†*Anasibirites*, n. subg. of *Sibirites*, Mojs. from the Trias; MOJSISOVICS, Denk. Ak. Wien lxiii, p. 615 [1897].  
†*Anasirenites*, n. subg. of *Sirenites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 725 [1893].  
†*Anatibetites*, from the Upper Trias of the Himalaya; MOJSISOVICS, Verh. geol. Reichsanst. 1896, p. 349 [1896, nom. nud.]: Denk. Ak. Wien lxiii, p. 635 [1897].  
†*Anatomites*, n. subg. of *Juvavites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 74 [1893].  
†*Anatropites*, n. subg. of *Tropites*, Mojs.; MOJSISOVICS, t. c. p. 184 [1893].  
†*Anolcites*, n. subg. of *Trachyceras*, Laube; MOJSISOVICS, t. c. p. 617 [1893].  
†*Arthaberites*, n. g., for *A. alexandra*, n. sp., from the Muschelkalk near Hallstatt; DIENER, Beitr. Pal. Oesterr.-Ung. xiii, p. 17.  
†*Bambanagites*, n. gen. from the Trias of the Himalaya; MOJSISOVICS, Verh. geol. Reichsanst. 1896, p. 350 [1896, nom. nud.]: Denk. Ak. Wien lxiii, p. 660 [1897].

- †*Barrandeites*, n. g., type *Ammonites turbina*, Dittm.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 153 [1893].
- †*Beloceras*, n. g. for *Goniatites multilobatus*, Beyr.; HYATT, P. Boston Soc. xxii, p. 333 [1884].
- †*Brancoceras*, n. g., type *Goniatites ixion*, Hall; HYATT, t. c. p. 325 [1884].
- †*Buchites*, n. subg. of *Ceratites*, de Haan; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 397 [1893].
- †*Celoceras*, n. g., for *Goniatites præmaturus*, Barrande; HYATT, P. Boston Soc. xxii, p. 312 [1884].
- †*Chionites*, n. subg. of *Arpadites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 451 [1893].
- †*Cryptoclymenia*, n. g., type *Clym. beaumonti*, Münster; HYATT, P. Boston Soc. xxii, p. 314 [1884].
- †*Cycloceltites*, n. subg. of *Celtites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 347 [1893].
- †*Danubites*, n. subg. of *Ceratites*, de Haan; MOJSISOVICS, t. c. p. 398 [1893].
- †*Daphnites*, n. subg. of *Arpadites*, Mojs.; MOJSISOVICS, t. c. p. 452 [1893].
- †*Dimoroceras*, n. g., type *Goniatites mamiliifer*, Sandb.; HYATT, P. Boston Soc. xxii, p. 330 [1884].
- †*Dimorphites*, n. subg. of *Juvavites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 74 [1893].
- †*Dimorphoceras*, n. g., for *Goniatites gilbertsoni*, Phill., and *looneyi*, Phill.; HYATT, P. Boston Soc. xxii, p. 331 [1884].
- †*Dionites*, n. subg. of *Arpadites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 453 [1893].
- †*Diplosirenites*, n. subg. of *Sirenites*, Mojs.; MOJSISOVICS, t. c. p. 725 [1893].
- †*Dittmarites*, n. subg. of *Arpadites*, Mojs.; MOJSISOVICS, t. c. p. 451 [1893].
- †*Drepanites*, n. subg. of *Arpadites*, Mojs.; MOJSISOVICS, t. c. p. 453 [1893].
- †*Ectolcites*, n. g. for *Ammonites pseudoaries*, F. v. Hauer and *E. hochstetteri*, n. sp.; MOJSISOVICS, t. c. p. 613 [1893].
- †*Eremites*, n. g., type *E. orientalis*, Mojs.; MOJSISOVICS, t. c. p. 704 [1893].
- †*Gastrioceras*, n. g. for *Goniatites listeri*, Phillips, and others; HYATT, P. Boston Soc. xxii, p. 327 [1884].
- †*Gephuroceras*, n. g., type *Goniatites sinuosus*, Hall; HYATT, t. c. p. 317 [1884].
- †*Glyphidites*, n. subg. of *Ceratites*, de Haan; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 397 [1893].
- †*Griesbachites*, n. subg. of *Juvavites*, Mojs. from the Trias; MOJSISOVICS, Verh. geol. Reichsanst. 1896, p. 347 [1896]: Denk. Ak. Wien lxxiii, p. 603 [1897].
- †*Guembelites*, for *G. jandianus*, n. sp., from the Upper Trias of the Himalaya; MOJSISOVICS, t. c. p. 349 [1896, nom. nud.]: as n. subg. of *Heraclites*; Denk. Ak. Wien lxxiii, p. 634 [1897].
- †*Haidingerites*, n. g. for *Ammonites acutinodis*, Hauer; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 393 [1893].
- †*Hauerites*, n. subg. of *Cyrtopleurites*, Mojs.; MOJSISOVICS, t. c. p. 517 [1893].
- †*Haugiceras*, n. n. for *Prionoceras*, Hyatt, nom. preocc.; COSSMANN, Rev. paleozool. iv, p. 43.
- †*Helictites*, n. subg. of *Ceratites*, de Haan; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 397 [1893].
- †*Heminautilus*, n. g., type *Goniatites hybridus*, Münster; HYATT, P. Boston Soc. xxii, p. 310 [1884].
- †*Homerites*, n. subg. of *Halorites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 13 [1893].
- †*Homoceras*, n. g., type *Goniatites calyx*, Phillips; HYATT, P. Boston Soc. xxii, p. 330 [1884].

- †*Jovites*, n. subg. of *Halorites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 13 [1893].
- †*Knemiceras*, n. g., type *Ammonites syriacus*; BÖHM, Zeitschr. Deutsch. geol. Ges. I, p. 200 [1898].
- †*Mæniceras*, n. g., type *Goniatites acutolateralis*, Sandb.; HYATT, P. Boston Soc. xxii, p. 321 [1884].
- †*Manticoceras*, n. g., type *Goniatites simulator*, Hall; HYATT, t. c. p. 318 [1884].
- †*Metasibirites*, n. subg. of *Sibirites*, Mojs. from the Trias; MOJSISOVICS, Denk. Ak. Wien lxiii, p. 616 [1897].
- †*Metatirolites*, n. subg. of *Tirolites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 588 [1893].
- †*Microtropites*, n. subg. of *Tropites*, Mojs.; MOJSISOVICS, t. c. p. 184 [1893].
- †*Militites*, n. g. for *M. schroeteri*, n. sp. and others; MOJSISOVICS, t. c. p. 334 [1893].
- †*Mimoceras*, n. g., type *Goniatites compressus*, Beyrich; HYATT, P. Boston Soc. xxii, p. 309 [1884].
- †*Münsterites*, n. subg. of *Arpadites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 451 [1893].
- †*Münsteroceras*, n. g., type *Goniatites oveni* var. *parallelus*, Hall; HYATT, P. Boston Soc. xxii, p. 326 [1884].
- †*Nomismoceras*, n. g. for *Goniatites spirorbis*, Phill., *rotiformis*, Phill., and others; HYATT, t. c. p. 330 [1884].
- †*Paracladiscites*, n. g. from the Upper Trias of India; MOJSISOVICS, Verh. geol. Reichsanst. 1896, p. 347 [1896, nom. nud.]: Denk. Ak. Wien lxiii, p. 657 [1897].
- †*Paracochloceras*, n. subg. of *Cochloceras*, Hauer; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 575 [1893].
- †*Parajuvarites*, n. gen. from the Trias; MOJSISOVICS, Verh. geol. Reichsanst. 1896, pp. 348 & 349 [1896, nom. nud.]: Denk. Ak. Wien lxiii, p. 590 [1897].
- †*Paralegoceras*, n. g., type *Goniatites iowensis*, M. & W.; HYATT, P. Boston Soc. xxii, p. 327 [1884].
- †*Pararcestes*, n. subg. of *Arcestes* Suess; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 785 [1893].
- †*Parathisbites*, n. subg. of *Ceratites*, de Haan; MOJSISOVICS, t. c. p. 397 [1893].
- †*Paratibetites*, from the Upper Trias of the Himalaya; MOJSISOVICS, Verh. geol. Reichsanst. 1896, p. 349 [1896, nom. nud.]: as n. subg. of *Tibetites*, Mojs.; MOJSISOVICS, Denk. Ak. Wien lxiii, p. 635 [1897].
- †*Paratropites*, n. subg. of *Tropites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 184 [1893].
- †*Parodiceras*, n. g., type *Goniatites discoideus* Hall; HYATT, P. Boston Soc. xxii, p. 319 [1884].
- †*Paulotropites*, n. subg. of *Tropites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 184 [1893].
- †*Peripleurites*, n. subg. of *Choristoceras*, Hauer; MOJSISOVICS, t. c. p. 546 [1893].
- †*Pharciceras*, n. g. for *Goniatites tridens*, Sandb., *G. clavilobus*, Sandb., and others; HYATT, P. Boston Soc. xxii, p. 336 [1884].
- †*Phormedites*, n. subg. of *Ceratites*, de Haan; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 397 [1893].
- †*Platyclymenia*, n. g. for *P. annulata*, *spinosa*, and *binodosa*, Münster; HYATT, P. Boston Soc. xxii, p. 314 [1884].
- †*Popanoceras*, n. g. for *Goniatites kingianus*, *G. koninckianus*, and others; HYATT, t. c. p. 338 [1884].
- †*Prionoceras*, n. g., type *Goniatites divinus*, Münster; HYATT, t. c. p. 328 [1884]: Renamed *Haugiceras*, q.v.

- +*Proarcestes*, n. subg. of *Arcestes*, Suess; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 785 [1893].
- +*Protrachyceras*, n. subg. of *Trachyceras*, Laube; MOJSISOVICS, t. c. p. 617 [1893].
- +*Psilocladiscites* [n. g. ?] from the Trias of Bosnia; MOJSISOVICS, Denk. Ak. Wien lxiii, p. 658 [1897].
- +*Ptycharcestes*, n. subg. of *Arcestes*, Suess; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 786 [1893].
- +*Sandbergeoceras*, n. g. for *Goniaticites tuberculosocostatus*, Sandb. and *G. chemungensis*, Hall; HYATT, P. Boston Soc. xxii, p. 333 [1884].
- +*Sandlingites*, n. g. for *Ammonites oribasus*, Dittmar and others; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 706 [1893].
- +*Schistoceras*, n. g. for an undescribed species; HYATT, P. Boston Soc. xxii, p. 336 [1884].
- +*Sibyllites*, n. g. for *S. tenuispinatus*, n. sp. and others; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 314 [1893].
- +*Sirenites*, n. g. from the Trias; MOJSISOVICS, t. c. p. 725 [1893].
- +*Sonninia*, aptychus of; NICKLES, Bull. Soc. Nancy xvi, p. 125.
- +*Sporodoceras*, n. g. type *Goniaticites bidens*, Sandb.; HYATT, P. Boston Soc. xxii, p. 321 [1884].
- +*Steinmannites*, n. subg. of *Arpadites*, Mojs.; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 452 [1893].
- +*Styrites*, n. g. for *S. tropitiiformis*, n. sp. and others; MOJSISOVICS, t. c. p. 264 [1893].
- +*Thetidites* from the Trias; MOJSISOVICS, Verh. geol. Reichsanst. 1896, p. 349 [1896, nom. nud.]: As n. subg. of *Sibirites*, Mojs.; Denk. Ak. Wien lxiii, p. 616 [1897].
- +*Thiobites*, n. subg. of *Ceratites*, de Haan; MOJSISOVICS, Abh. geol. Reichsanst. vi, 2, p. 397 [1893].
- +*Tibetites*, n. subg. of *Cyrtopleurites*, Mojs.; MOJSISOVICS, t. c. p. 516 [1893].
- +*Tornoceras*, n. g. type *Goniaticites uniaingularis*, Hall; HYATT, P. Boston Soc. xxii, p. 320 [1884].
- +*Triainoceras*, n. g. for *Goniaticites costatus*, d'Arch. and de Vern.; HYATT, t. c. p. 337 [1884].

### TETRABRANCHIATA.

- +*Acleistoceras*, n. g., type *Apioceras olla*, Saem.; HYATT, P. Boston Soc. xxii, p. 277 [1884].
- +*Aipoceras*, n. g. for *Gyroceras gibberosum*, de Koninck; HYATT, t. c. p. 296 [1884].
- +*Alpheiceras*, n. n. for *Hyatticeras* COSSMANN [q.v.] nec *Hyattoceras*, Gemm.; COSSMANN, Rev. paleozool. iv, p. 144.
- +*Anomaloceras*, n. g. for *Nautilus anomalus*, Barrande; HYATT, t. c. p. 283 [1884]: Renamed *Hyatticeras*, q.v.
- +*Aphelaeoceras*, n. g. for *Nautilus difficilis*, de Koninck, and *Discites disciformis*, M. & W.; HYATT, P. Boston Soc. xxii, p. 293.
- +*Apidoceras*, n. g., type *Gyroceras magnificum*, Billings; HYATT, t. c. p. 289 [1884].
- +*Barrandeoceras*, n. g., type *Nautilus natator*, Billings; HYATT, t. c. p. 299 [1884].
- +*Billingsites*, n. g., type *Ascoceras canadense*, Billings; HYATT, t. c. p. 278 [1884].
- +*Cenoceras*, n. g., type *Nautilus intermedius*, Sowerby; HYATT, t. c. p. 300 [1884].

- †*Centroceras*, n. g., type *Goniatites marcellensis*, Vanuxem; HYATT, t. c. p. 283 [1884].
- †*Conradiceras*, n. n. for *Solenoceras*, Hyatt nec Conrad; COSSMANN, Rev. paleozool. iv, p. 43.
- †*Cranoceras*, n. g., type *Cyrtoceras depressum*, Goldf.; HYATT, P. Boston Soc. xxii, p. 281 [1884].
- †*Cymatoceras*, n. g., type *Nautilus pseudoelegans* d'Orb.; HYATT, t. c. p. 301 [1884].
- †*Dawsonoceras*, n. g., type *Orthoceras annulatum*; HYATT, t. c. p. 276 [1884].
- †*Deiroceras*, n. subg. of *Actinoceras*, type *Orthoceras python*, Billings; HYATT, t. c. p. 273 [1884].
- †*Diadiploceras*, n. g., type *Dia. quadratum*, Hall [nom. nud.]; HYATT, t. c. p. 268 [1884].
- †*Disciloceras*, nom. nov. for *Discites* M'Coy, type *D. costellatus*, M'Coy; HYATT, t. c. p. 292 [1884].
- †*Edaphoceras*, n. g., type *Temnocheilus niotensis*, M. & W.; HYATT, t. c. p. 288 [1884].
- †*Enclimatoceras*, n. g., type *Enclim. ulrichi*, White; HYATT, t. c. p. 270 [1884].
- †*Ephippioceras*, n. g., type *Nautilus ferratus*, Owen; HYATT, t. c. p. 290 [1884].
- †*Eremoceras*, n. g., type *Cyrtoceras syphax*, Billings; HYATT, t. c. p. 282 [1884].
- †*Geisonoceras*, n. g., type *Orthoceras rivale*, Barrande; HYATT, t. c. p. 275 [1884].
- †*Grypoceras*, n. g., type *Nautilus mesodiscus*, v. Hauer; HYATT, t. c. p. 269 [1884].
- †*Halloceras*, n. g., type *Gyroceras undulatum*, Hall; HYATT, t. c. p. 284 [1884].
- †*Hexameroceras*, n. g., type *Phragmoceras panderi*, Barrande; HYATT, t. c. p. 278 [1884].
- †*Hyatticeras*, n. n. for *Anomaloceras*, Hyatt, nom. preocc.; COSSMANN, Rev. paleozool. iv, p. 43 [Renamed *Alpheiceras*, q.v.].
- †*Kionoceras*, n. g., type *Orthoceras doricum*, Barrande; HYATT, P. Boston Soc. xxii, p. 275 [1884].
- †*Koninckioceras*, n. g., type *Nautilus ingens*, de Koninck; HYATT, t. c. p. 295 [1884].
- †*Kophinoceras*, n. g., type *Cyrtoceras ornatum*, d'Arch. & de Vern.; HYATT, t. c. p. 285 [1884].
- †*Litoceras*, n. g., type *Nautilus versutus*, Billings; HYATT, t. c. p. 268 [1884].
- †*Maelonoceras*, n. g., type *Phragmoceras præmaturum*, Billings; HYATT, t. c. p. 280 [1884].
- †*Mesochasmoceras*, n. g., type *Nautilus latidorsatus*, M'Coy; FOORD (173), p. 72.
- †*Metacoceras*, n. g., type *Nautilus sangamonensis*, M. & W.; HYATT, P. Boston Soc. xxii, p. 268 [1884].
- †*Mojavaroceras*, n. g., type *Temnocheilus neumayeri*, Mojs.; HYATT, t. c. p. 269 [1884].
- †*Naedyceras*, n. g., type *Trochoceras eugenium*, Hall; HYATT, t. c. p. 281 [1884].
- Nautilus pompilius*, arterial circulation of; GRIFFIN, Johns Hopkins Univ. Circ. xix, p. 53.
- †*Nephriticeras*, n. g., type *Nautilus buccinum*, Hall; HYATT, P. Boston Soc. xxii, p. 300 [1884].
- †*Oonoceras*, n. g. for *Cyrtoceras acinacius*, Barrande, and others; HYATT, t. c. p. 280 [1884].



- +*Pentameroceras*, n. g., type *Gomphoceras mirum*, Barrande; HYATT, t. c. p. 278 [1884].
- +*Phacoceras*, n. g., type *Nautilus oxyostomus*, de Koninck; HYATT, t. c. p. 293 [1884].
- +*Phloioceras*, n. g., type *Nautilus gemmatus*, Mojs.; HYATT, t. c. p. 286 [1884].
- +*Placenticeras*, phylogeny and development; SMITH (482).
- +*Plectoceras*, n. g., type *Nautilus jason*, Billings; HYATT, P. Boston Soc. xxii, p. 268 [1884].
- +*Pselioceras*, n. g., type *Nautilus ophioneus*, Waagen; HYATT, t. c. p. 299 [1884].
- +*Ptyoceras*, n. g., type *Cyrtoceras alienum*, Barrande; HYATT, t. c. p. 282 [1884].
- +*Rizoceras*, n. g., type *Orthoceras indocile*, Barrande; HYATT, t. c. p. 276 [1884].
- +*Sactoceras*, n. g., type *Orthoceras richteri*, Barrande; HYATT, t. c. p. 274 [1884].
- +*Septameroceras*, n. g., type *Gomphoceras inflatum*, Barrande; HYATT, t. c. p. 278 [1884].
- +*Solenoceras*, n. g., type *Nautilus canaliculatus*, Owen; HYATT, t. c. p. 286 [1884]: Renamed *Conradiceras*, q.v.
- +*Sphyradoceras*, n. g., type *Trochoceras dio*, Hall; HYATT, P. Boston Soc. xxii, p. 298 [1884].
- +*Spyroceras*, n. g., type *Orthoceras crotalum*, Hall; HYATT, t. c. p. 276 [1884].
- +*Stroboceras*, n. g., type *Gyroceras hartii*, Dawson; HYATT, t. c. p. 291 [1884].
- +*Strophiceras*, n. g. for *Gyroceras binodosum*, Sandb.; HYATT, t. c. p. 286 [1884].
- +*Tainoceras*, n. g., type *Nautilus quadrangulus*, McChesney; HYATT, t. c. p. 269 [1884].
- +*Tetrameroceras*, n. g., type *Phragmoceras bicinctum*, Barrande; HYATT, t. c. p. 277 [1884].
- +*Titanoceras*, n. g., type *Nautilus ponderosus*, White; HYATT, t. c. p. 289 [1884].
- +*Triboloceras*, n. g., type *Gyroceras serratum*, de Koninck; HYATT, t. c. p. 294 [1884].
- +*Trimeroceras*, n. g., type *Gomphoceras staurostoma*, Barrande; HYATT, t. c. p. 278 [1884].
- +*Tripleuroceras*, n. g., type *Orthoceras archiaci*, Barrande; HYATT, t. c. p. 289 [1884].
- +*Triplioceras*, n. g. for *Nautilus insperatus*, Barrande; HYATT, t. c. p. 285 [1884].
- +*Tripteroceras*, n. g., type *Orthoceras hastatum*, Billings; HYATT, t. c. p. 287 [1884].
- +*Uranoceras*, n. g., type *Cyrtoceras uranum*, Barrande; HYATT, t. c. p. 299 [1884].
- +*Vaginoceras*, n. g., type *Orthoceras multitubulatum*, Hall; HYATT, t. c. p. 266 [1884].
- +*Zittelloceras*, n. g., type *Cyrtoceras lamellosum*, Hall; HYATT, t. c. p. 284 [1884].

## II. GASTROPODA.

New works on the distribution of Gastropoda; SIMROTH (468).

New works on the morphology and biology of Gastropoda; SIMROTH (469).

## PULMONATA.

## STYLOMMATOPHORA.

Stylommatophora, morphology of; TÄUBER (517).

## TESTACELLIDÆ and SELENITIDÆ.

- Apera burnupi*, figd.; COLLINGE, Ann. S. African Mus. ii, p. 4.  
*Apera natalensis*, S. Africa; COLLINGE, Ann. S. African Mus. ii, p. 3, fig.: n. sp.  
*Ennea cruciata*, German East Africa; MARTENS, SB. Ges. naturf. Berlin 1900, p. 179: *E. (Microstrophia) irregularis*, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 119: n. spp.  
*Glandina iheringi*, Guatemala; PILSBRY, Nautilus xiv, p. 4: *G. chiriquiensis*, Panama, *floccata*, U.S. of Colombia, p. 66, *æquatoria*, Ecuador, p. 67; DA COSTA, P. Malac. Soc. London iv, figg.: n. spp.  
*Happia iheringi*, Brazil; PILSBRY, P. Ac. Philad. 1900, p. 385, fig.: n. sp.  
*Paryphanta*, see reference inserted at p. 63, last year: *P. lignaria*, note on with figure; HUTTON, Tr. N. Zealand Inst. xxxii, p. 22.  
*Streptaxia tumescens*, p. 330, *interruptus*, p. 331, Brazil; SUTER, Rev. Mus. Paulista iv, figg.: *S. (Discartemon) paradiscus*, p. 117, *pachyglottis*, *diplodon*, p. 118, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900: n. spp.  
*Streptostylus flavescens*, Panama; DA COSTA, P. Malac. Soc. London iv, p. 66, fig.: n. sp.

## LIMACIDÆ, ZONITIDÆ, and PHILOMYCIDÆ.

- Monographs of *Zonites* and *Nanina*; KOBELT in MARTINI & CHEMNITZ (311).  
*Agriolimax corsicus*, Corsica; SIMROTH, Nachrbl. Deutsch. malak. Ges. 1900, p. 102: n. sp.  
*Amalia dalmatina*, Dalmatia, p. 106, *montenegrina*, Montenegro, p. 107; SIMROTH, t. c.: *A. ponsonbyi*, S. Africa; COLLINGE, Ann. S. African Mus. ii, p. 2, fig.: n. spp.  
*Arnouldia nahaensis*, Loo-Choo Is.; GUDE, P. Malac. Soc. London iv, p. 75, fig.: *A. ceratodes*, p. 398, *nanodes*, p. 399, Japan; GUDE, Ann. Nat. Hist. vi: n. spp.  
†*Chancelia*, n. gen. for *C. letourneuxi*, n. sp., post-tertiary, Algeria; HAGEN-MÜLLER, Bull. Soc. malac. France ii, p. 311 [1885].  
*CrySTALLUS sulcatus, velatus*, Japan; GUDE, Ann. Nat. Hist. vi, p. 399: n. spp.  
†*Delevieleusia*, n. gen. for five n. spp. from post-tertiary, Algeria; HAGEN-MÜLLER, Bull. Soc. malac. France ii, p. 305 [1885].  
*Euconulus*, note on genus, of which *Conulus*, Fitz., and *Arnouldia*, Brgt., are synonyms; PILSBRY, Nautilus xiv, p. 81.  
*Euconulus reinhardtii*, Japan; PILSBRY, t. c. p. 81: n. sp.  
*Eurypus*, Semper nec Kirby, renamed *Fretum*, q.v.  
†*Faudelia*, n. gen. for *F. letourneuxi*, n. sp., post-tertiary, Algeria; HAGEN-MÜLLER, Bull. Soc. malac. France ii, p. 309 [1885].  
*Fretum*, n. n. for *Eurypus*, Semper nec Kirby; SYKES, P. Malac. Soc. London iv, p. 140.  
*Fretum suteri*, Norfolk I., p. 140, *grayi*, Norfolk and Phillip Is., n. 14 SYKES, t. c. figg.: n. spp.

- Gæotis dourvillei*, note on; COLLINGE, J. Malac. vii, p. 179.
- Gastrodonta suppressa*, n. var.; PILSBRY, Nautilus xiii, p. 107: *G. intertexta*, n. var.; PILSBRY, op. cit. xiv, p. 40.
- Gastrodonta walkeri*, Gt. Smoky Mts.; PILSBRY, P. Ac. Philad. 1900, p. 146: n. sp.
- Godwinia*, n. gen. of *Zonitidae* for *Vitrina caperata*, Gould; SYKES (509), p. 277.
- Guppya hopkinsi*, Cocos Is.; DALL, P. Ac. Philad. 1900, p. 97, fig. [Radula and jaw; PILSBRY, t. c. p. 105]: n. sp.
- Hemiplecta floweri, neptunus*, notes on, with anatomy; GODWIN-AUSTEN, P. Malac. Soc. London iv, pp. 31-36.
- Hemiplecta platytania*, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 121: n. sp.
- Hyalinia*, integument of; ANDRÉ, Rev. Suisse Zool. viii, p. 425.
- Hyalinia baldwini*, Hawaiian Islands; ANCEY, Bull. Soc. malac. France vi, p. 192 [1889]: n. sp.
- Kaliella difficilis*, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 120: *K. multivolvris*, Japan; PILSBRY, P. Ac. Philad. 1900, p. 383: *K. symmetrica*, p. 80, *fraterna*, p. 81, Japan; PILSBRY, Nautilus xiv: *K. elata, crenulata, pagoduloides*, Japan; GUDE, Ann. Nat. Hist. vi, p. 453: n. spp.
- Krynckillus hanryanus*, France; FLORENCE, Bull. Soc. malac. France vi, p. 330 [1889]: n. sp.
- Limacopsis*, n. gen. for *Limax caeruleus*; SIMROTH, Abh. Senckenb. Ges. xvii, p. 3 [1890].
- Limax*, nervous system; VERATTI (535A): *L. agrestis*, maturation and fertilization of egg; BYRNES (73): *L. coccineus*, Gistel, appears to be a var. of *Arion rufus*; COCKERELL, Nautilus xiii, p. 117.
- Limax wohlberedti*, Montenegro, p. 98, *wolterstorffi, obscurus*, Corsica, p. 99; SIMROTH, Nachrbl. Deutsch. malak. Ges. 1900: *L. modestus*, France; FLORENCE, Bull. Soc. malac. France vi, p. 333 [1889]: n. spp.
- Macrochlamys*, anatomy; WIEGMANN (559): *M. convallata*, n. var.; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900, p. 8.
- Macrochlamys alluaudi*, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, pp. 113, 444, fig.: *M. fulgens*, Loo-Choo Is.; GUDE, P. Malac. Soc. London iv, p. 75, fig.: *M. aureofusca*, German East Africa; MARTENS, SB. Ges. naturf. Berlin 1900, p. 178: *M. micrograpta*, Japan; PILSBRY, P. Ac. Philad. 1900, p. 382: n. spp.
- Medyla imitatrix*, Norfolk I.; SYKES, P. Malac. Soc. London iv, p. 142: n. sp.
- Microcystis baldwini*, Ancey, anatomy; GODWIN-AUSTEN in SYKES (509), p. 281.
- Microcystis hirasei*, Japan; GUDE, Ann. Nat. Hist. vi, p. 400: *M. nux, castaneocincta*, Norfolk I.; SYKES, P. Malac. Soc. London iv, p. 139, figg.: n. spp.
- Milax pacomei*, France; FLORENCE, Bull. Soc. malac. France vi, p. 326 [1889]: n. sp.
- Nanina (Xestina) theobaldiana* (NEVILL ubi?), Kudin; KOBELT in MARTINI & CHEMNITZ (311) p. 980, fig.: n. sp. ?
- Omphalina levigata*, n. var.; PILSBRY, P. Ac. Philad. 1900, p. 135.
- Otesia (Coneuplecta) annamitica*, p. 119, *globulosa*, p. 120, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900: n. spp.
- Philomycus*, note on Asiatic species; COCKERELL, J. Malac. vii, p. 127.
- Philomycus secretus*, North Carolina; COCKERELL, Nautilus xiv, p. 59: n. sp.
- Philonesia*, n. gen. of *Zonitidae* for *Microcystis baldwini*, Ancey; SYKES (509), p. 280.
- Sesara*, notes on genus, with figure of *S. diplotodon*; GUDE, J. Malac. vii, pp. 139-143.

- Sesara harmeri*, Assam; GUDE, t. c. p. 139, fig.: n. sp.  
*Sitala macgillivrayi*, Norfolk I.; SYKES, P. Malac. Soc. London iv, p. 142, fig.: n. sp.  
*Stenopus anguineus*, Ancey, radula; SUTER, Rev. Mus. Paulista iv, p. 332.  
*Trochomorpha kuesteri*, varieties of; MOELLENDORFF, J. Malac. vii, p. 104.  
*Trochonanina platysoma*, Norfolk I.; SYKES, P. Malac. Soc. London iv, p. 140, fig.: n. sp.  
*Vitrea rhoadsi*, note on distribution; WALKER, Nautilus xiv, p. 8: *V. petrophila*, n. var.; PILSBRY, P. Ac. Philad. 1900, p. 138.  
*Vitrea harimensis*, Japan; PILSBRY, t. c. p. 384: *V. actinophora*, Galapagos; DALL, t. c. p. 93, fig.: *V. clingmani*, Gt Smoky Mts.; DALL in PILSBRY, t. c. p. 150, fig.: n. spp.  
*Vitrina caperata*, Gould, anatomy; GODWIN-AUSTEN in SYKES (509), p. 277: *V. pellucida*, sinistral specimen; RIEMENSCHNEIDER, Nachrbl. Deutsch. malak. Ges. 1900, p. 116.  
*Vitrinizonites latissimus*, n. var.; PILSBRY, P. Ac. Philad. 1900, p. 137.  
*Zonites rollei*, Kobelt, genitalia; COLLINGE, P. Malac. Soc. London iv, p. 37.  
*Zonitoides neomexicanus*, Cockrill. & Pils, New Mexico; PILSBRY, Nautilus xiii, p. 114: n. sp.

## ARIONIDÆ.

- Anadenus dautzenbergi*, China; COLLINGE, J. Malac. vii, p. 134, fig.: n. sp.  
*Ariolimax steindachneri*, Puget Sound; BABOR, Ann. Hofmus. Wien xv, p. 95: n. sp.  
*Geomalacus maculosus*, eggs and young of; ROGERS (446): *G. maculosus*, notes on; ADAMS, J. Conch. ix, p. 301.  
*Oopelta flavescens, granulosa*, S. Africa; COLLINGE, Ann. S. African Mus. ii, p. 6, figg.: n. spp.  
*Tetraspis*, n. gen. for *T. letourneuxi*, n. sp., S. Europe; HAGENMÜLLER, Bull. Soc. malac. France ii, p. 303 [1885].

## ENDODONTIDÆ.

- Charopa kubaryi, ponapica*, Caroline Islands; MOELLENDORFF, J. Malac. vii, p. 110: n. spp.  
*Endodonta (Thaumatodon) callizona*, Caroline Islands; MOELLENDORFF, J. Malac. vii, p. 110: *E. helleri*, Galapagos; DALL, P. Ac. Philad. 1900, p. 93, fig.: n. spp.  
*Flammulina nigrescens*, note on anatomy; SUTER in MOELLENDORFF, J. Malac. vii, p. 106.  
*F. (Calymna) nigrescens*, Caroline Islands; MOELLENDORFF, J. Malac. vii, p. 107: n. sp.  
*Garrettia*, n. n. for *Libera*, Garrett nec Haan; COSSMANN, Rev. paleozool. iv, p. 43 [*Garrettia* is preocc., *Libera* does not appear to have been proposed by Haan as a genus].  
*Helicodiscus eigenmanni*, Texas; PILSBRY, Nautilus xiv, p. 41: n. sp.  
*Helix rotundata*, scalariform; CARTER, Sci. Gossip vii, p. 96.  
*Helix (Phas) sesquicincta*, German East Africa; MARTENS, SB. Ges. naturf. Berlin 1900, p. 117: *H. dictyonina*, New Caledonia; EUTHYM, Bull. Soc. malac. France ii, p. 257 [1885]: n. spp.  
*Libera*, Garrett, renamed *Garrettia*, q.v.  
*Patula digonophora*, Hawaiian Islands; ANCEY, Bull. Soc. malac. France vi, p. 171 [1889]: n. sp.  
*Pitya elsa*, Hawaiian Islands; id. t. c. p. 180 [1889]: n. sp.  
*Platystoma*, Ancey, renamed *Saissetia*, q.v.

- Punctum japonicum*, Japan; PILSBRY, Nautilus xiv, p. 82: *P. blandianum*, Gt Smoky Mts.; PILSBRY, P. Ac. Philad. 1900, p. 148: n. spp.  
*Pyramidula alternata*, n. var.; PILSBRY, Nautilus xiii, p. 114.  
*Pyramidula elrodi*, Montana; PILSBRY, Nautilus xiv, p. 40: *P. pretiosa*, Japan; GUDE, Ann. Nat. Hist. vi, p. 454: *P. patagonica*, subfossil, Patagonia, p. 334, *schuppi*, Brazil, p. 335; SUTER, Rev. Mus. Paulista iv, figg.: n. spp.  
*Saissetia*, n. n. for *Platystoma*, Ancey nec Klein; ANCEY, Bull. Soc. malac. France v, p. 368 [1888].

## HELICIDÆ.

- Acavus*, anatomy of genus; RANGLES, P. Malac. Soc. London iv, pp. 103-113: Note on genus; SYKES, t. c. p. 114.  
*Acavus polei*, Ceylon; COLLETT, J. Ceylon Asiat. Soc. xv, p. 163, fig.: n. sp.  
*Amphidromus* should be transferred here from *Bulinidæ*; PILSBRY in TRYON (529).  
*Ashmunella*, anatomy of; PILSBRY, P. Ac. Philad. 1900, pp. 107-109: *A. hyporhyssa*, new varieties of; COCKERELL, Nautilus xiv, p. 72.  
*Camenella fruhstorferi*, p. 129, *nigricans*, p. 130, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900: n. spp.  
*Campylæa frigida*, variation of; ANDREAE, Mt. Mus. Hildesheim xii, p. 10.  
*Campylocathaica*, n. subgen. of *Cathaica*, type *C. przewalskii*, Mart.; ANDREAE, t. c. p. 5.  
*Cathaica*, on the genus, with new names and figures, but no diagnoses; ANDREAE, t. c.: *C. przewalskii*, variation of; ANDREAE, t. c.  
*Cathaica obrutschewi*, p. 25, *perversa*, p. 26, Kansu; STURANY, Denk. Ak. Wien lxx, figg.: n. spp.  
*Chloritis (Trichochloritis) fragilis*, Japan; GUDE, P. Malac. Soc. London iv, p. 70, fig.: n. sp.  
*Epiphragmophora*, æstivation of; WILLIAMSON, Nautilus xiv, p. 13: *E. mormonum*, new varieties; PILSBRY, op. cit. xiii, p. 128: *E. oresigena*, n. var.; IHERING in PILSBRY, P. Ac. Philad. 1900, p. 389.  
*Epiphragmophora harperi*, California; BRYANT, Nautilus xiii, p. 143: *E. boversi*, California; BRYANT, Nautilus xiii, p. 122: *E. leucanthea*, Cerros I., p. 99, *crassula*, Natividad I., p. 100, (*Micrarionta*) *guadelupiana*, Guadalupe I., p. 101, *cutalinæ*, Catalina I., (*kelletii*, var. ?) *clementina*, San Clemente I., p. 103, *orcutti*, Lower California, p. 104; DALL, P. Ac. Philad. 1900, figg.: n. spp.  
*Eucathaica*, n. subgen. of *Cathaica*, type *C. fasciola*, Drap.; ANDREAE, Mt. Mus. Hildesheim xii, p. 3.  
*Euhadra luhuana*, n. var.; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 108.  
*Euhadra (?) pseudocampylæa*, borders of Thibet and Setchuen; ANCEY, Nautilus xiv, p. 83: n. sp.  
*Eulota mercatoria* and *E. caliginosa* are distinct species, with n. vars. of former, *E. callizona*, and *E. luhuana*; PILSBRY & GULICK, Nautilus xiv, pp. 88-91: *E. callizona*, n. var.; PILSBRY, Nautilus xiv, p. 60: *E. tourannensis*, n. var.; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 131.  
*Eulota (Eulotella) micronesica*, Caroline Islands; MOELLENDORFF, J. Malac. vii, p. 110: *E. gudeana*, Japan; PILSBRY, Nautilus xiv, p. 60: *E. (Plectotropis) kiusiuensis*, Japan; PILSBRY, t. c. p. 79: *E. horrida*, (*Trishoplita* ?) *mesogonia*, Japan; PILSBRY, t. c. p. 11: *E. (Euhadra) grata*, Japan; GUDE, Ann. Nat. Hist. vi, p. 455: *E. hirasei*, p. 10, *awajiensis*, p. 11, Japan; GUDE, P. Malac. Soc. London iv, figg.

- [respectively synonyms of *cavicolis*, Pils., and *aperta*, Pils.; GUDE, t. c. p. 78]: *E. (Plectotropis) amula*, p. 71, (*Euhadra*) *sericea*, p. 74, Japan, (*Plectotropis*) *lepidophora*, Loo-Choo Is., p. 76; GUDE, t. c., figg.: n. spp.
- Ganesella jacobii*, Japan; PILSBRY, Nautilus xiv, p. 12: *G. turrita*, Loo-Choo Is.; GUDE, P. Malac. Soc. London iv, p. 75, fig.: *G. tozana*, Japan; GUDE, Ann. Nat. Hist. vi, p. 455: *G. pagodula*, Japan; EHRLMANN, Zool. Anz. xxiii, p. 381: n. spp.
- Helicidae*, anatomy of several species; WIEGMANN (559): Notes on classification; MOELLENDORFF (338): 'Convergenzerscheinung' in; ANDREAE (12): Note on 'rock-boring'; BOYCOTT, Sci. Gossip vi, p. 280: *Helices* boring rocks; HARLÉ (216): *H. albolabris*, growth of; MORRELL, Nautilus xiv, p. 9: *H. aspersa*, scalariform; PERCEVAL, Sci. Gossip vi, p. 253: *H. ericetorum*, sinistral; WELCH, Irish Natural. ix, p. 21: *H. lapicida*, sinistral; PARTRIDGE, J. Malac. vii, p. 180: *H. marmorata*, albino var.; JONES, J. Conch. ix, p. 302: *H. nemoralis*, abnormalities in; WELCH (551); GREEN, Irish Natural. ix, p. 271: *H. pomatia*, variation of genital organs; PEGOT (376): *H. pomatia*, blood of; PHIBALIX, C.R. Soc. Biol. vii, p. 729: *H. pomatia*, supplement to revision of varieties; BUCHNER, Jahresber. Ver. Württemb. lvi, pp. 224-237: *H. pomatia*, radula; TEMPÈRE (523).
- Helix cerin*, I. of Capri; BELLINI, Boll. Soc. zool. Ital. i, p. 39: *H. leontinei*, France; GERMAIN, Bull. Soc. Rouen xxiv, p. 197: *H. infra-fusca*, p. 177, *fulleborni*, p. 178, *binaria*, p. 179, German East Africa; MARTENS, SB. Ges. naturf. Berlin 1900: *H. (Camæna) lavezzarii*, pp. 108, 435, (*C.*) *vorvonga*, pp. 109, 436, (*Euhadra*) *fauveli*, pp. 110, 437, (*Eulota*) *vignali*, pp. 110, 439, (*Chloritis*) *marimberti*, pp. 111, 440, (*C.*) *durandi*, pp. 111, 441, (*C.*) *gereti*, (*Ganesella*) *saurivonga*, pp. 112, 442, (*G.*) *coudeini*, pp. 113, 443, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, figg.: *H. (Macularia) grossularia*, p. 122, (*Xeroleuca*) *subsuta*, p. 123, Morocco; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900: *H. aimophilopsis*, Switzerland; VILLESERRE, Bull. Soc. malac. France ii, p. 15 [1885]: *H. ilicis*, p. 51, *suberis*, p. 54, *evenosi*, p. 56, *euthymeana*, p. 59, *actiella*, p. 62, *ademata*, p. 65, *avenionensis*, p. 67, *tarsyana*, p. 70, *salentina*, p. 73, *jusiana*, p. 76, France; LOCARD, t. c. [1885]: *H. szechenyii*, China; ANCEY, t. c. p. 131 [1885]: *H. ergilensis*, p. 232, *sesteri*, p. 233, Diarbekir, *ninivita*, p. 234, Mossoul; GALLAND, t. c. [1885]: *H. oppidi*, p. 273, *transfuga*, p. 275, Lower Pyrenees; FAGOT, t. c. [1885]: *H. knütteli*, Austria, p. 400, *wittmanni*, Russia, p. 408; SERVAIN, op. cit. vi [1889]: n. spp.
- Isomeria subcastanea*, note on, with n. var.; GUDE, J. Malac. vii, p. 144, fig.
- Levantina mardinensis*, Mesopotamia; KOBELT, Nachrbl. Deutsch. malak. Ges. 1900, p. 156: n. sp.
- Metodontia griphodes*, South Kansu; STURANY, Denk. Ak. Wien lxx, p. 23, fig.: n. sp.
- Metostracon*, n. gen. for *M. mima*, n. sp., Mexico; PILSBRY, P. Malac. Soc. London iv, pp. 24-27, fig.
- Platypetatus obrutschevi*, South Kansu; STURANY, Denk. Ak. Wien lxx, p. 26, fig.: n. sp.
- Plectopylis giardi*, note on; FISCHER, Bull. Sci. France Belgique xxxii, p. 329.
- Plectopylis francoisi*, Tonkin; FISCHER, t. c. p. 330: *P. lepida*, Tonkin; GUDE, Ann. Nat. Hist. v, p. 313: *P. jugatoria*, China; ANCEY, Bull. Soc. malac. France ii, p. 127 [1885]: n. spp.
- Plectotropis conica*, Japan; GUDE, Ann. Nat. Hist. vi, p. 400: *P. chondroderma*, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 131: *P. comata*, South Kansu; STURANY, Denk. Ak. "

- lxx, p. 18, fig.: *P. delectabilis*, *pachysoma*, p. 380, *polyplecta*, p. 379, Japan; EHSMANN, Zool. Anz. xxiii : n. spp.
- Pliocathaica*, n. subgen. of *Cathaica*, type *C. pulveratrix*, Mart.; ANDREAE, Mt. Mus. Hildesheim xii, p. 3.
- Polygyra andrewsæ*, n. var., pp. 123, 125, *edwardsi*, n. var., p. 129, *hirsuta*, n. var., p. 132; PILSBRY, P. Ac. Philad. 1900: *P. hirsuta*, n. var.; PILSBRY, t. c. p. 453: *P. uvulifera*, note on with n. var.; PILSBRY, Nautilus xiii, p. 107.
- Polygyra pilsbryi*, Arkansas; FERRISS, Nautilus xiv, p. 29: n. sp.
- Polygyratia stenostrepta*, n. var.; PILSBRY, P. Ac. Philad. 1900, p. 389.
- Polygyratia sargenti*, *affinis*, Peru; PILSBRY, t. c. p. 388: n. spp.
- Psadara derbyi*, Brazil; IHERING, Rev. Mus. Paulista iv, p. 546, fig.: n. sp.
- Satsuma brunnea*, West Japan; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 107: *S. (?) kutupaensis*, South Kansu; STURANY, Denk. Ak. Wien lxx, p. 28, fig.: n. sp.
- Solaropsis*, notes on genus, with anatomy; IHERING (241): *S. heliaca*, anatomy; WIEGMANN, Nachrbl. Deutsch. malak. Ges. 1900, p. 178.
- Solaropsis pilsbryi*, p. 544, *bachi*, p. 545, Brazil; IHERING, Rev. Mus. Paulista iv, figg.: n. spp.
- Sonorella*, n. gen., type *Epiphragmophora hachitana*, Dall, with anatomy; PILSBRY, P. Ac. Philad. 1900, p. 556.
- Stilpnodiscus euphyes*, South Kansu; STURANY, Denk. Ak. Wien lxx, p. 19, fig.: n. sp.
- Thysanophora cæca*, Guppy, radula; SUTER, Rev. Mus. Paulista iv, p. 335: *T. hornii*, note on; PILSBRY, Nautilus xiii, p. 98.
- Trishoplita goodwini*, n. var.; PILSBRY, op. cit. xiv, p. 80: *T. goodwini*, n. var.; PILSBRY & GULICK, t. c. p. 90.
- Trishoplita pallens*, Japan; EHSMANN, Zool. Anz. xxiii, p. 381: *T. cretacea*, p. 400, *dacotæ*, p. 454, Japan; GUDE, Ann. Nat. Hist. vi : n. spp.
- Vallonia pulchella* in California; STEARNS, Nautilus xiv, p. 65.
- Xanthonyx* is not a synonym of *Binneya* but belongs to *Helicidæ*, as may *Cryptostrakon*; PILSBRY (399).
- Xerocathaica*, n. subgen. of *Cathaica*, type *C. kreitneri*, Hilber; ANDREAE, Mt. Mus. Hildesheim xii, p. 4.

#### BULIMIDÆ, ORTHALICIDÆ, and BULIMULIDÆ.

- Amphidromus* belongs to *Helicidæ*, with review of genus and n. var. of *A. sinensis*, p. 192, of *A. xiengensis*, pp. 195 & 196; PILSBRY in TRYON (529).
- Amphidromus semifrenatus*, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900, p. 8: *A. placostylus*, Annam; MOELLENDORFF, t. c. p. 132: *A. metabletus*, p. 22, *ingens*, p. 23, Annam; MOELLENDORFF, t. c. : n. spp.
- Bothriembryon*, review of genus, with n. vars. of *B. inflatus*, p. 5, *physoides*, p. 10; PILSBRY in TRYON (529).
- Bulimulus dukinfieldi*, Brazil; MELVILL, P. Malac. Soc. London iv, p. 116, fig.: *B. snodgrassi*, *approximatus*, p. 90, *hoodensis*, p. 91, *indefatigabilis*, p. 92, Galapagos; DALL, P. Ac. Philad. 1900, figg.: *B. (Drymaris) inusitatus*, Costa Rica; FULTON, Nautilus xiv, p. 87: *B. steerei*, p. 391, *hematospira*, Peru, p. 392; PILSBRY, P. Ac. Philad. 1900: n. spp.
- Bulimus irregularis*, Pfr., note on; JOUSSEAUME, Bull. Soc. Philom. ii, p. 39.
- Bulimus insignior*, p. 242, *servaini*, p. 244, New Caledonia; EUTHYME, Bull. Soc. malac. France ii [1885]: n. spp.
- Callistocharis*, n. sect. of *Placostylus*, type *P. malleatus*; PILSBRY in TRYON (529), p. 102.

- Clavator placostylodes*, Madagascar; KOBELT, Nachrbl. Deutsch. malak. Ges. 1900, p. 21: *C. vaysierei*, Madagascar; ANCEY, J. Conchyl. xlviii, p. 12, fig.: n. spp. [Are both synonyms of *Bulimus grandidieri*, Cr. & Fisch.; DAUTZENBERG, J. Conchyl. xlviii, p. 461.]
- Eurytus couturei*, Bolivia; ANCEY, Nautilus xiv, p. 42: *E. argenteus*, Venezuela; JOUSSEAUME, Bull. Soc. Philom. ii, p. 41, fig.: n. spp.
- Leucocharis*, n. sect. of *Placostylus*, type *P. pancheri*; PILSBRY in TRYON (529), p. 67.
- Pachnodus fagotianus*, Mayotte; ANCEY, Bull. Soc. malac. France ii, p. 144 [1885]: n. sp.
- Partula*, systematic position of, with anatomy of *P. rosea*; PILSBRY (396): *P. rufa*, new varieties; MOELLENDORFF, J. Malac. vii, p. 112.
- Placocharis*, n. sect. of *Placostylus*, type *P. macgillivrayi*; PILSBRY in TRYON (529), p. 77.
- Placostylus*, review of genus, with *P. coxiana*, n. n. for *P. cozi*, Hartman nec Pease, p. 118; PILSBRY in TRYON (529).
- Placostylus heterostylus*, New Hebrides, p. 72, garretti, p. 103, hab. unknown; PILSBRY in TRYON (529), figg.: n. spp.
- Plecocylus dalmasi*, Santa Marta; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 151, fig.: n. sp.
- Rhodesa*, see post p. 67.
- Strophocylus paranaguensis* (Pils. & Ihering), Brazil; PILSBRY, P. Ac. Philad. 1900, p. 390, fig.: *S. pilsbryi*, Brazil; IHERING, t. c. p. 394, fig.: n. spp.

## BULIMINIDÆ, CYLINDRELLIDÆ, and PUPIDÆ.

- Bensonella*, n. sect. of *Bifidaria*, type *Pupa plicidens*, Bens.; PILSBRY, P. Ac. Philad. 1900, p. 591 [footnote].
- Berendtia*, note on; PILSBRY, t. c. p. 554.
- Bonnanius*, n. gen. for *B. bouvieri*, n. sp., hab. unknown [apparently Sokotra]; JOUSSEAUME, Bull. Soc. Philom. ii, p. 39, fig.: n. sp.
- Buliminidæ*, monograph continued; KOBELT in MARTINI & CHEMNITZ (311): *B. extorris*, n. var.; PILSBRY, Nautilus xiv, p. 32.
- Buliminus* (*Napeus*) *nimrothi*, Azores; KOBELT in MARTINI & CHEMNITZ (311), p. 659, fig.: *B. bambuseti*, German East Africa; MARTENS, SB. Ges. naturf. Berlin 1900, p. 118: *B. messengeri*, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, pp. 114, 445, fig.: *B. (Petræus) pilsbryanus*, Arabia; ANCEY, Nautilus xiv, p. 43: *B. rugulosus*, West Japan; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 108: *B. hirasei*, p. 32, *callistoderma*, p. 33, Japan; PILSBRY, Nautilus xiv: *B. schypaensis*, p. 28, *obrutschewi*, p. 29, *diaprepes*, *teres*, p. 30, *xerampelinus*, p. 31, *commensalis*, *ottonis*, p. 32, *asuphes*, *amphidoxus*, p. 33, *interstratus*, *euonymus*, p. 34, South Kansu; STURANY, Denk. Ak. Wien lxx, figg.: n. spp.
- Buliminopsis*, anatomy; WIEGMANN (559).
- Bulimus heliocana*, Aden; JOUSSEAUME, Bull. Soc. malac. France vi, p. 346 [1889]: n. sp.
- Cerion stevensoni*, Bahamas; DALL, Nautilus xiv, p. 65: n. sp.
- Clausilia biphlicata*, white var.; STANDEN, J. Conch. ix, p. 331: *C. ventricosa*, having two mouths; RIEMENSCHNEIDER, Nachrbl. Deutsch. malak. Ges. 1900, p. 114: *C. postcornea*, n. n. for *C. cornea*, Phil. nec Schroeter; JOUSSEAUME, Bull. Soc. Philom. ii, p. 11: *C. deyrollei* is a synonym of *C. perezi*; JOUSSEAUME, t. c. p. 21: *C. japonica*, n. var.; PILSBRY, P. Ac. Philad. 1900, p. 447 [= *oostoma*, Mildf.; PILSBRY, t. c. p. 677]: *C. bidentata*, with two mouths; ORR, J. Conch. ix, p. 374: *C. brevior*, n. var.; PILSBRY, P. Ac. Philad. 1900, p. 677.



- Clausilia (Phadusa) cincticollis*, p. 383, (*P. crassilamellata*, (*P. iijima*, p. 382, Japan; EHRMANN, Zool. Anz. xxiii: *C. (Euphadusa) comes*, p. 673, (*E. monelasmus*, (*E. iotaptyx*, p. 674, (*Tyrannophadusa*, n. sect.) *mikado*, p. 676, (*Stereophadusa*) *hondana*, p. 677, (*S.*) *sub-japonica*, p. 678, (*Hemiphadusa*) *nolani*, p. 679, (*H.*) *toana*, p. 680, (*H.*) *shikokuensis*, p. 681, Japan; PILSBRY, P. Ac. Philad. 1900, figg.: *C. callistomella*, pp. 114, 446, *gereti*, pp. 115, 447, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlvi, figg.: *C. granulosa*, Peru; SYKES, J. Malac. vii, p. 166, fig.: *C. (Euphadusa) oncauchen*, West Japan; MOELLENBORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 109: *C. hakonensis*, p. 443, *awajiensis*, *subaurantiaca*, p. 444, *aulacophora*, p. 445, *hirasei*, *hyperoptyx*, p. 446, Japan; PILSBRY, P. Ac. Philad. 1900, figg.: *C. elatior*, China; ANCEY, Bull. Soc. malac. France ii, p. 134 [1885]: *C. bajamontiana*, p. 198, *bonficciiana*, p. 199, Dalmatia; LETOURNEUX, t. c. [1885]: n. spp.
- Calocentrum irregulare*, note on, with n. var. of *C. minorinum*; PILSBRY, P. Ac. Philad. 1900, pp. 551, 553, fig.
- Calocentrum eisenianum*, Lower California; PILSBRY, t. c. p. 553, fig.: n. sp.
- Exbalea*, n. gen. for *Balea peruviana*, Phil.; JOUSSEAUME, Bull. Soc. Philom. ii, p. 34.
- Hypselostoma annamiticum*, Annam; MOELLENBORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 133: n. sp.
- Immersidens*, n. sect. of *Bifidaria* for *B. ashmuni* and *perversa*; PILSBRY & VANATTA, P. Ac. Philad. 1900, p. 606.
- Lyropupa*, n. sect. of *Nesopupa* (q.v.) for *Pupa lyrata*, Gld.; PILSBRY, t. c. p. 432.
- Nema geayi*, p. 14, Venezuela, *archidona*, p. 15, *cocaensis*, p. 16, Ecuador, *rochebrunii*, p. 19, Colombia, *femurina*, p. 21, *auriculina*, p. 22, Ecuador, *versicolor*, p. 25, hab. not given, *cousini*, p. 32, Ecuador; JOUSSEAUME, Bull. Soc. Philom. ii, figg.: n. spp.
- Nesopupa*, n. gen. for *Pupa tantilla*, Gld.; PILSBRY, P. Ac. Philad. 1900, p. 432.
- Pupa iheringi*, subfossil, Brazil; SUTER, Rev. Mus. Paulista iv, p. 336, fig.: n. sp.
- Pupida*, review of United States species; PILSBRY & VANATTA (421): Notes on Australian species; PILSBRY (390): On Polynesian species; PILSBRY (391).
- Pupopsis*, n. gen. for *Buliminus pupopsis*, Gredler; STURANY, Denk. Ak. Wien lxx, p. 36. [Author refers to Gredler (Zool. Rec. 1898, no. 161), but genus was not then definitely proposed.]
- Pupopsis dissociabilis*, p. 35, *polystrepta*, *paraplesia*, p. 36, South Kansu; STURANY, t. c. figg.: n. spp.
- Steeriana*, n. gen. for *Clausilia malleolata*, &c.; JOUSSEAUME, Bull. Soc. Philom. ii, p. 33.
- Tyrannophadusa*, n. sect. of *Clausilia*, type *C. mikado*, n. sp.; PILSBRY, P. Ac. Philad. 1900, p. 676.
- Vertigo cubana*, Dall, is a synonym of *Pupa costata*, Pse., and not from Cuba; PILSBRY, t. c. p. 432.
- Vertigo norfolkensis*, Norfolk I.; SYKES, P. Malac. Soc. London iv, p. 145, fig.: *V. (Ptychochilus) ponapica*, Caroline Islands; MOELLENBORFF, J. Malac. vii, p. 113: *V. columbiana* (Sterki MS.), Vancouver and various locs. in U.S.A.; PILSBRY & VANATTA, P. Ac. Philad. 1900, p. 602, fig.: *V. cocosensis*, Cocos I.; DALL, t. c. p. 98, fig.: n. spp.
- Zaptyx*, n. sect. of *Clausilia*, type *C. hirasei*, Pils.; PILSBRY, t. c. p. 672.

## STENOGYRIDÆ and ACHATINELLIDÆ.

- Achatina zebra*, Transvaal, p. 118, *passargei*, German East Africa, p. 119; MARTENS, SB. Ges. naturf. Berlin 1900 : n. spp.
- Achatinellide*, review of the family, with *A. confusa*, n. n. for *A. physa*, Newc. 1855 nec 1854, p. 312; SYKES (509): *Achatinella*, systematic position of, with anatomy of *A. dolei*; PILSBRY (396).
- Achatinella* (*Achatinellastrum*) *vailuaensis*, Maui; SYKES (509), p. 328, fig. : n. sp.
- Amastrella*, n. subgen. of *Amastra* for *A. rugulosa*, Pease; SYKES (509), p. 352.
- Auriculella perkinsi*, Oahu; SYKES (509), p. 377, fig. : n. sp.
- Cæcilioides acicula*, notes on; ADAMS, J. Conch. ix, p. 297.
- Digoniasis*, n. gen. for *D. bourguignati*, n. sp.; JOUSSEAUME, Bull. Soc. malac. France vi, p. 348 [1889].
- Ganomidos fraterculus*, Congo Free State; DUPUIS & PUTZEYS, Ann. Soc. malac. Belgique xxxiv, Bull. p. xiii, fig. : n. sp.
- Kauaia*, n. n. for *Carinella*, Pfr. nec Sby.; SYKES (509), p. 355.
- Leptachatina acuminata*, Gould, radula; GODWIN-AUSTEN in SYKES (509), p. 357.
- Leptachatina arborea*, p. 357, Hawaii, *conicoides*, p. 359, Molokai, *convexiuscula*, p. 360, Oahu, *emerita*, p. 361, Molokai, *imitatrix*, *konaensis*, p. 364, Hawaii, *supracostata*, p. 370, Lanai, *vana*, p. 371, Oahu; SYKES (509), figg. : n. spp.
- Leptinaria* (*Neosubulina*) *martensi*, Cocos I.; DALL, P. Ac. Philad. 1900, p. 97, fig. : n. sp.
- Limicolaria oniformis*, Arabia; ANCEY, Nautilus xiv, p. 42: *L. bourguignati*, p. 157, *spekiana*, *burtoniana*, p. 160, *bridouxi*, p. 161, Central Africa; GRANDIDIER, Bull. Soc. malac. France ii [1885] : n. spp.
- Opeas pruinosum*, Caroline Islands; MOELLENDOFF, J. Malac. vii, p. 114 : n. sp.
- Perdicella fulgurans*, Maui; SYKES (509), p. 329, fig. : n. sp.
- Perideropsis fallsensis*, p. xiii, *mvulaensis*, p. xiv, Congo Free State; DUPUIS & PUTZEYS, Ann. Soc. malac. Belgique xxxiv, Bull. figg. : n. spp.
- Rhodea cousini*, p. 36, *equatorensis*, p. 37, Ecuador, *gereti*, p. 38, Colombia; JOUSSEAUME, Bull. Soc. Philom. ii, figg. : n. spp.
- Tornatellina ovatula*, *pusilla*, Caroline Islands; MOELLENDOFF, J. Malac. vii, p. 114: *T. compacta*, Hawaii, *confusa*, Kauai, p. 380, *cylindrica*, Oahu and Kauai, p. 381, *perkinsi*, Kauai, p. 382, *trochoides*, Lanai, p. 383; SYKES (509), figg. : n. spp.

## SUCCINEIDÆ, and VERONICELLIDÆ.

- Atopos* (*Padangia*, n. subgen.) *schildii*, Sumatra; BABOR, Ann. Hofmus. Wien xv, p. 100 : n. sp.
- Padangia*, n. subgen. of *Atopos* for *A. schildii*, n. sp.; BABOR, t. c. p. 100.
- Succinea campestris*, n. var.; PILSBRY, Nautilus xiv, p. 74.
- Succinea* (*rusticana*, var. ?) *guadelupensis*, Guadelupe I.; DALL, P. Ac. Philad. 1900, p. 102, fig. : *S. protracta*, Hawaii, SYKES (509), p. 388, fig. : n. spp.
- Triboniophorus*, anatomy; PFEIFFER, Zool. Jahrb. Anat. xiii, pp. 293-358, fig.
- Veronicella*, notes on; COCKERELL, Nautilus xiii, p. 131.

*Veronicella gilsoni*, Fiji Islands; COLLINGE, J. *Malac.* vii, p. 179: *V. willeyi*, Lifu, p. 431, *brunnea*, Esafate, p. 435; COLLINGE in WILLEY's *Zool. Results*, pt. iv, figg.: n. spp.

## BASOMMATOPHORA.

### AURICULIDÆ, LIMNÆIDÆ, and PHYSIDÆ.

- Alexia myosotis*, n. var.; PILSBRY, *Nautilus* xiv, p. 40.  
*Alexia* (*Kochia*, n. sect.) *oronica*, p. 240, (*Pseudomelampus*, n. sect.) *kochi*, (*P.*) *jolyi*, p. 241, Oran; PALLARY, J. *Conchyl.* xlviii, first two figg.: n. spp.  
*Ancylus fluviatilis*, note on; CROWTHER, *Halifax Natural* v, pp. 56 & 57.  
*Ancylus sharpi*, Oahu; SYKES (509), p. 394, fig.: n. sp.  
*Auriculina*, n. sect. of *Auricula*, type *A. gangetica*, Bena.; KOBELT in MARTINI & CHEMNITZ, *Auriculacea*, p. 77 [1898].  
*Carychium minimum*, notes on; ADAMS, J. *Conch.* ix, p. 301.  
*Kochia*, n. sect. of *Alexia* for *A. denticulata*, Mont., and others; PALLARY, J. *Conchyl.* xlviii, p. 239.  
*Limnaea*, variation of; JOHANSEN (247): *L. stagnalis*, development of; DYBOWSKI, *Nachrbl. Deutsch. malak. Ges.* 1900, pp. 111-114: *L. mighelsi*, habits of; WALKER, *Nautilus* xiv, p. 8: *Limnaea*, note on 'hybrids'; WEBB, *Sci. Gossip* vi, p. 280: *L. binominis*, n. n. for *Physa sandwichensis*, Clessin; SYKES (509), p. 391: *L. stagnalis* and *L. auricularia*, cross between; CHASTER, J. *Conch.* ix, p. 282: *L. burnetti* and *L. involuta*, notes on; ADAMS, t. c. p. 299: *L. intermedia* and *marginata*, notes; LOCARD, *Bull. Soc. malac. France* ii, p. 79 [1885].  
*Melampus biscayensis*, Gulf of Gascony; FISHER, J. *Conchyl.* xlviii, p. 68, fig.: *M. strigosus*, W. Costa Rica; MARTENS, *Biol. Centr.-Amer.* p. 561, fig.: n. spp.  
*Physa*, notes on Illinois species, with radula of *P. gyrina*; BAKER (23): *P. moussoni*, n. n. for *P. lirata*, Mousson nec Tristram; ANCEY, *Nautilus* xiv, p. 83.  
*Planorbis*, early development; HOLMES (234): *P. corpulentus*, Say, is a good species; WALKER, *Nautilus* xiii, p. 133: supplemental note on; WALKER, *op. cit.* xiv, p. 33.  
*Planorbis persicus*, Persia; ANCEY, t. c. p. 83: *P. exarescens*, *neumayri*, Central Asia; STURANY, *Denk. Ak. Wien* lxx, p. 38, figg.: n. spp.  
*Pseudomelampus*, n. sect. of *Alexia* for *Melampus exiguus*, Lowe, and others; PALLARY, J. *Conchyl.* xlviii, p. 240.

### SIPHONARIIDÆ, GADINIIDÆ, AND AMPHIBOLIDÆ.

- Ampullarina*, auct. nec Sby., renamed *Salinator*, q. v.  
*Gadina requeni*, Mediterranean; LOCARD, *Echange* xvi, p. 75: n. sp.  
*Salinator*, n. n. for *Ampullarina*, auct. nec Sby.; HEDLEY, *P. Linn. Soc. N. S. Wales* xxv, p. 511.  
*Scutulum*, Monts., renamed *Williamia*, q. v.  
*Siphonaria henica*, Bermudas; VERRILL & BUSH, *Tr. Connect. Ac.* x, p. 524, fig.: n. sp.  
*Williamia*, n. n. for *Scutulum*, Monts. nec Tournouer; MONTEROSATO (584), p. 150.

## OPISTHOBRANCHIATA.

Opisthobranchs, classification; GUIART (207).

## NUDIBRANCHIATA.

- Aelidiella drusilla*, p. 233, *faustina*, p. 235, New Zealand; BERGH, Zool. Jahrb. Syst. xiii, figg. : n. spp.  
*Aldisa zelandica*, figure and anatomy; BERGH (38).  
*Ancylodoris baicalensis*, Lake Baikal; DYBOWSKI, Nachrbl. Deutsch. malak. Ges. 1900, p. 143, fig. : n. sp.  
*Archidoris nyctea*, Bare-Island, Vancouver; BERGH, Zool. Jahrb. Syst. xiii, p. 222, fig. : n. sp.  
*Atthila ingolfiana*, n. gen. and sp., S. W. of Iceland, forms also n. fam. *Atthilidae*; BERGH, Danish Ingolf-Exped. ii, No. 3, p. 23, fig.  
*Bathydoris ingolfiana*, Davis Strait; BERGH, t. c., No. 3, p. 8, fig. : n. sp.  
*Candiella ingolfiana*, S. W. of Iceland; BERGH, t. c., No. 3, p. 19, fig. : n. sp.  
*Chromodoris* (?) *roseopicta*, Bermudas; VERRILL, Tr. Connect. Ac. x, p. 549, fig. : n. sp.  
*Coryphella* (?) *pallida*, Bermudas; VERRILL, t. c. p. 547 : n. sp.  
*Discodoris tristis*, Azores; BERGH, Result. Camp. Scient. xiv, p. 11 : n. sp. [apparently new, but not so marked].  
*Doridoxa ingolfiana*, n. gen. and sp., Davis Strait, forms also n. fam. *Doridoxidae*; BERGH, Danish Ingolf-Exped. ii, No. 3, p. 16, fig.  
*Doris* (?) *bistellata*, *olivacea*, Bermudas; VERRILL, Tr. Connect. Ac. x, p. 548, first figd. : n. spp.  
*Euplocamus atlanticus*, anatomy; BERGH (38).  
*Fiona marina*, radula; BERGH (38) : *F. nobilis*, radula; TEMPÈRE (523).  
*Glaucus atlanticus*, note on; BERGH (38).  
*Goniolitis intermedia*, p. 36, *atypica*, p. 37, Davis Strait; BERGH, Danish Ingolf-Exped. ii, No. 3, figg. : n. spp.  
*Lamellidoris lactea*, p. 548, (?) *quadrimaculata*, p. 549, Bermudas; VERRILL, Tr. Connect. Ac. x, last figd. : n. spp.  
*Platydoris argo*, anatomy; BERGH (38).  
*Samla*, n. gen. for *S. annuligera*, n. sp., Laysan Island; BERGH, Zool. Jahrb. Syst. xiii, p. 237, fig.

## TECTIBRANCHIATA.

- Tectibranchiata*. Anatomy, classification and phylogeny; GUIART, Causeries Scient. Soc. Zool. France 1900, No. 4, pp. 77-132, figg.  
Morphology of Tectibranchs; MAZZARELLI (323).  
*Aplysia*, embryology; CARAZZI (79-82); GEORGEVITCH (184); MAZZARELLI (320-322); Nervous system; GUIART (208); Radula; TEMPÈRE (523); Visceral nervous system; BOTTAZZI & ENRIQUES, Arch. ital. Biol. xxxiv, pp. 111-143.  
*Aplysia megaptera*, Bermudas; VERRILL, Tr. Connect. Ac. x, p. 545, fig. : n. sp.  
*Bulla bermuda*, Bermudas; VERRILL & BUSH, t. c. n. 523, fig. : n. sp.  
*Chelinodura plebeia*, Pacific Ocean; BERGH in <sup>h</sup> Philippinen, Wiss. Result. iv, p. 1<sup>nn</sup>

- Cylichnina*, n. gen. for *Cylichna laevisculpta*, Granata, etc.; MONTEROSATO (584), p. 143.
- †*Hamlinia*, n. g. of *Actæonidae* for *Natica olivæ*, Fraas, and others; BÖHM, Zeitschr. Deutsch. geol. Ges. lii, p. 214.
- Herrania*, n. sect. for *Bulla scabra*, Mull.; MONTEROSATO (584), p. 147.
- Joannisia*, n. gen. for *Tylodina citrina*, Joannis; MONTEROSATO (584), p. 149.
- Johania*, n. gen. for *Bulla retifera*, Forbes; MONTEROSATO (584), p. 147.
- Marsenia perspicua*, varieties; BERGH (38), p. 37.
- Marsenia leptolemma*, with anatomy, Azores; BERGH (38), p. 31, fig.: n. sp.
- Micrella*, n. gen. for *M. dubia*, n. sp., with anatomy, between Madeira and Azores; BERGH (38), p. 28, fig.
- Notarchus glaucus*, animal; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 97.
- Oscaniopsis amboinei*, Amboina; VAYSSIÈRE, J. Conchyl. xlviii, p. 9: n. sp.
- Oscanius*, note on genus with anatomy of *O. membranaceus*; BERGH (38).
- Ossiana*, n. sect. for *Philina monterosatoi*, Jeff.; MONTEROSATO (584), p. 147.
- Paraplysia lowii*, S. Africa; GILCHRIST, Tr. S. Africa Soc. xi, p. 122, fig.: n. sp.
- Pelta coronata*, 'embryogenic condensation' in; VAYSSIÈRE, Zool. Anz. xxiii, p. 286.
- Phyllaplysia taylori*, Vancouver Island; DALL, Nautilus xiv, p. 92: *P. pacifica*, Ralum; BERGH in SEMPER's Reisen im Arch. Philippinen, Wiss. Result. iv, p. 182, fig.: n. spp.
- Pleurobranchæa*, anatomy; BERGH (38).
- Pleurobranchæa capensis*, Cape of Good Hope; VAYSSIÈRE, J. Conchyl. xlviii, p. 10: n. sp.
- Pleurobranchopsis*, n. gen. for *P. aurantiaca*, n. sp., Bermudas; VERRILL, Tr. Connect. Ac. x, p. 547, fig.
- Pleurobranchus californicus*, California; DALL, Nautilus xiv, p. 92: n. sp.
- Pneumodermon*, development of; CARAZZI (81).
- Psyche*, Rang, renamed *Verillopsyche*, q. v.
- Ringicula kochiana*, Cebu; SOWERBY, P. Malac. Soc. London iv, p. 129, fig.: n. sp.
- Ringiculina*, n. gen. for *Ringicula leptocheila*, Brugn.; MONTEROSATO (584), p. 141.
- Rozamella*, n. sect. for *Cylichna jeffreysi*, Weink.; MONTEROSATO (584), p. 145.
- Scaphander multistriatus*, Braz., figd.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 510.
- Tornatina decurrens*, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x, p. 523, fig.: n. sp.
- Verrillopsyche*, n. n. for *Psyche*, Rang nec Linn.; COSSMANN, Rev. paleozool. iv, p. 43.
- Volvula persimilis*, Mürch, note on with fig.; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 155.

## NUCLEOBRANCHIATA.

*Pterotrachea*, organs of hearing; SOLGER, Schr. Ges. Danzig x, p. 65.

## PROSOBRANCHIATA.

Gonads in the Prosoobranchs ; HALLER (213, 214).

## PECTINIBRANCHIATA.

## TOXOGLOSSA.

## TEREBRIDÆ, CONIDÆ, and PLEUROTOMIDÆ.

- †*Catenotoma*, n. sect. of *Surcula*, for *S. catenata* (Lamk.), Eocene ; COSSMANN in COSSMANN & PISSARRO, Bull. Soc. geol. Normand. xix, p. 39.
- Cirillia*, n. sect. for *Pleurotoma linearis*, Mont. ; MONTEROSATO (584), p. 133.
- Cithara cognata*, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xii, p. 103, fig. : n. sp.
- Clathromangelia*, n. sect. for *Pleurotoma granum*, Phil. ; MONTEROSATO (584), p. 131.
- Clathurella legrandi*, Bedd., figd. ; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 509 ; *C. atropurpurea*, Monts. MS., n. n. for *C. purpurea*, auct. nec Montagu ; LOCARD & CAZIOT, Ann. Soc. Linn. Lyon xli, p. 245.
- Clathurella cylindrica*, Monts. MS., Corsica ; LOCARD & CAZIOT, Ann. Soc. Linn. Lyon xli, p. 248 ; *C. sexdentata*, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xii, p. 104, fig. : n. spp.
- Conus*, review of the group of *C. textile* ; MELVILL (327) : *C. consors*, Sby., note on ; WHEELER, Nautilus xiv, p. 86 : *C. dalli*, Stearns, note on ; DAUTZENBERG, J. Conchyl. xlviii, p. 190.
- Conus grangeri*, hab. query ; SOWERBY, Ann. Nat. Hist. v, p. 441, fig. : *C. cholmondeleyi*, hab. unknown ; MELVILL, J. Conch. ix, p. 308, fig. : n. spp.
- Cordieria*, n. gen. for *Pleurotoma reticulata*, Ren., etc. ; MONTEROSATO (584), p. 131.
- Crossopleura*, n. gen. for *Pleurotoma maravigna*, Payr. ; MONTEROSATO (584), p. 127.
- Drillius gabrieli*, p. 100, *howitti*, p. 101, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xii, figg. : *D. rhodochroa*, Rio Hacha, Santa-Marta, p. 165, *chazaliei*, Cumana, Rio Hacha, Santa-Marta, p. 166, *claudoni*, Rio Hacha, p. 167, *jousseamei*, Santa-Marta, p. 168 ; DAUTZENBERG, Mem. Soc. zool. France xiii, figg. : n. spp.
- Eurytus*, H. & A. Ad. nec Gistel, renamed *Mazatlanian*, q. v.
- Ginnania*, n. sect. for *Pleurotoma fuscata*, Phil. ; MONTEROSATO (584), p. 127.
- Glyphostoma rugilabrum*, Cebu ; SOWERBY, P. Malac. Soc. London iv, p. 127, fig. : n. sp.
- Halia priamus*, anatomy ; POIRIER, Bull. Soc. malac. France ii, p. 17 [1885].
- Leufroyia*, n. gen. for *Pleurotoma leufroyi*, Mich., etc. ; MONTEROSATO (584), p. 134.
- Mangelia difficilis*, Monts. MS., Corsica ; LOCARD & CAZIOT, Ann. Soc. Linn. Lyon xli, p. 243 : *M. flaccida*, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xii, p. 102, fig. : n. spp.
- Mazatlanian*, n. n. for *Eurytus*, H. & A. Ad. nec Gistel ; DALL, Nautilus xiv, p. 44.
- Miromorpha flindersi*, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xii, p. 104, fig. : n. sp.

- Philbertia*, n. sect. for *Pleurotoma bicolor*, Risso, etc.; MONTEROSATO (584), p. 132.  
*Smithia*, n. sect. for *Pleurotoma striolata*, Sc.; MONTEROSATO (584), p. 128.  
*Terebra fictilia*, Hinds, figd.; HEDLEY, P. Linn. Soc. N. S. Wales *xv*, p. 509.  
*Terebra apicincta*, The Kowie; SOWERBY, P. Malac. Soc. London *iv*, p. 5, fig.: n. sp.  
*Vielliersia*, n. sect. for *Pleurotoma attenuata*, Mont.; MONTEROSATO (584), p. 128.

## RACHIGLOSSA.

## OLIVIDÆ, MARGINELLIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Ancilla osculata*, Pondoland; SOWERBY, P. Malac. Soc. London *iv*, p. 3, fig.: n. sp.  
*Bullata*, Jousseau, renamed *Gibberulina*, q. v.  
*Fuscomitra*, Monts. MS., n. sect. of *Mitra* for *M. fusca*, Rve.; PALLARY, J. Conchyl. *xlvi*, p. 263.  
*Gibberulina*, n. n. for *Bullata*, Jousseau; MONTEROSATO (584), p. 139.  
*Marginella tenisoni*, n. n. for *M. cypreoides*, T. Woods nec Anton; PRITCHARD, Victorian Natural. *xvii*, p. 55.  
*Marginella ringicula*, Cebu; SOWERBY, P. Malac. Soc. London *iv*, p. 126, fig.: *M. whani*, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria *xiii*, p. 137, fig.: *M. cratericula*, *multiplicata*, p. 91, *biplacata*, Tasmania, *simsoni*, Tasmania and S. Australia, p. 92, *mayii*, Tate, *ovuliformis*, p. 93, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. *xxiv*: n. spp.  
*Mitra obtusa*, apparently n. n. for *M. cornicula*, pars; LOCARD & CAZIOT, Ann. Soc. Linn. Lyon *xlvi*, p. 232.  
*Mitra* (*Callithea*) *alabaster*, Cebu; SOWERBY, P. Malac. Soc. London *iv*, p. 126, fig.: *M. bathyraphe*, *canaliculata*, *euzonata*, The Kowie; SOWERBY, P. Malac. Soc. London *iv*, p. 4, figg.: n. spp.  
*Neptuneopsis gilchristi*, anatomy; WOODWARD (570).  
*Turricula scalariformis*, T. Woods, figd.; HEDLEY, Rec. Austral. Mus. *iii*, p. 218.  
*Volutida*, notes on radula; DALL, Science *xii*, p. 824: *V. ancilla*, anatomy; WOODWARD (570): *V. scapha*, sinistral; SOWERBY, P. Malac. Soc. London *iv*, p. 45.  
*Voluta uniplicata*, Japan, p. 439, (*Lyria*) *grangeri*, p. 440, hab. query; SOWERBY, Ann. Nat. Hist. *v*, figg.: n. spp.  
*Volutilithes abyssicola*, anatomy; WOODWARD (570).

FASCIOLARIIDÆ, BUCCINIDÆ, NASSIDÆ, COLUMBELLIDÆ,  
and MURICIDÆ.

- Buccinum*, radula; TEMPÈRE (523).  
*Buccinum brucei*, Franz-Josef Land; MELVILL & STANDEN, Mem. Manchester Soc. *xliv*, No. 4, p. 9, fig.: n. sp.  
*Bullia capensis*, Cape of Good Hope; EUTHYME, Bull. Soc. malac. France *ii*, p. 237 [1885]: n. sp.  
*Cantharus kingicola*, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. *xxiv*, p. 91: n. sp.  
*Chauvetia*, n. n. for *Nesaea*, Risso nec Lamarck; MONTEROSATO (584), p. 137.  
*Columbella nanisca*, n. n. for *C. nana*, Dunker nec Michaud; HERVIER, J. Conchyl. *xlvi*, p. 363 [1899].

- Columbella (Seminella) aliceæ*, Oran ; PALLARY, J. Conchyl. xlviii, p. 279, fig.: *C. filmeræ*, Pondoland, *beckeri*, The Kowie ; SOWERBY, P. Malac. Soc. London iv, p. 3, figg. : n. spp.
- Cyclope westerlundi*, Greece ; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1900, p. 89 : n. sp.
- Donovania fenestrata*, Tasmania ; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 94 : n. sp.
- Euthria interrupta*, Japan ; SOWERBY, Ann. Nat. Hist. v, p. 441, fig.: *E. filmeræ*, *eburnea*, Pondoland ; SOWERBY, P. Malac. Soc. London iv, p. 1, figg. : n. spp.
- Folinæa*, n. sect. for *Buccinum lefebvrei*, Maravigna ; MONTEROSATO (584), p. 136.
- Megalatractus aruanus*, L., note on ; HEDLEY, P. Linn. Soc. N. S. Wales xxv, pp. 98, 508.
- Murex*, notes on some species ; KENYON, P. Malac. Soc. London iv, p. 39.
- Murex marconensis*, Florida ; SOWERBY, J. Malac. vii, p. 162, fig.: *M. petri*, California ; DALL, Nautilus xiv, p. 37 : n. spp.
- Nassa*, radula ; TEMPÈRE (523).
- Nassa filmeræ*, Pondoland ; SOWERBY, P. Malac. Soc. London iv, p. 2, fig.: *N. coralligena*, Oran ; PALLARY, J. Conchyl. xlviii, p. 275, fig.: *N. corrupta*, Monta. MS., Corsica ; LOCARD & CAZIOT, Ann. Soc. Linn. Lyon xvi, p. 260 : n. spp.
- Nassa*, Risso, renamed *Chauvetia*, q. v.
- Ocenebra kochiana*, Cebu ; SOWERBY, P. Malac. Soc. London iv, p. 126, fig. : n. sp.
- Orania*, n. subgen. of *Murex* for *M. spada*, Libassi ; PALLARY, J. Conchyl. xlviii, p. 285.
- Pagodula*, n. sect. for *Murex carinatus*, Biv. ; MONTEROSATO (584), p. 116.
- Pardalina*, n. g. of *Columbellidae*, type *C. pardalina* [sic] ; JOUSSEAUME, Mem. Soc. zool. France i, p. 177 [1888].
- Phos chazaliei*, Testigos Is., Santa-Marta ; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 181, fig. : n. sp.
- Poveria*, n. gen. for *Murex scalarinus*, Biv. ; MONTEROSATO (584), p. 113.
- Pseudofusus*, n. sect. for *Murex rostratus*, Olivi, etc. ; MONTEROSATO (584), p. 117.
- Siphonalia pfefferi*, Japan ; SOWERBY, Ann. Nat. Hist. v, p. 440, fig. : n. sp.
- Sistrum nicoceanum*, Argentina ; PILSBRY, Nautilus xiv, p. 3 : n. sp.
- Tritonidea inculpta*, The Kowie ; SOWERBY, P. Malac. Soc. London iv, p. 2, fig. : n. sp.
- Trophon* (?) *insignis*, The Kowie ; SOWERBY, t. c. p. 2, fig. : n. sp.

## TÆNIOGLOSSA.

## LOTORIIDÆ, CASSIDIDÆ, DOLIIDÆ, CYPRÆIDÆ, and STROMBIDÆ.

- Amphiperas beckeri*, Pondoland ; SOWERBY, P. Malac. Soc. London iv, p. 5, fig. : n. sp.
- Cassus booleyi*, Andaman Islands ; SOWERBY, J. Malac. vii, p. 163, fig. : *C. craticulatus*, Cape of Good Hope ; EUTHYMÆ, Bull. Soc. malac. France ii, p. 250 [1885] : n. spp.
- Cypræa kaulani* is probably a var. of *C. helvola* ; ANON, J. Conch. ix, p. 377.
- Cypræa kaulani*, Hawaiian Islands ; KENYON, P. Malac. Soc. London iv, p. 68, fig. : *C. (Trivia) galapagensis*, Galapagos, p. 208, (*T. buttoni*, hab. query, p. 209 ; MELVILL, Ann. Nat. Hist. iv, figg. : n. spp.



- Dolium procellarum*, Cape of Good Hope; EUTHYME, Bull. Soc. malac. France ii, p. 247 [1885]: n. sp.  
*Erato denticulata*, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria xiii, p. 133, fig.: n. sp.  
*Gibberulus*, n. g., type *Strombus gibberulus*, Gmel.; JOUSSEAUME, Mem. Soc. zool. France i, p. 174 [1888].  
*Lampusia nodocostata*, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 90: n. sp.  
*Simpulidæ*, proposed to replace *Tritonidæ*; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 189.  
*Strombus belutschiensis*, notes on; SMITH, P. Malac. Soc. London iv, p. 43.  
*Trivia acutiusculata*, hab. unknown; KENTON, t. c. p. 69, fig.: n. sp.

CERITHIIDÆ, MODULIDÆ, TRICHOTROPIDIDÆ, TURRITELLIDÆ  
and CÆCIDÆ.

- Bittium variegatum*, Braz., is a synonym of *Cerithium tenue*, Sby.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 96.  
*Cocum tenue, tornatum*, p. 537, *oberum, delicatulum, debile*, p. 538, *crispum*, p. 539, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x, fig.: n. spp.  
*Cerithidium*, n. gen. for *Cerithium submammillatum*, Rayn.; MONTEROSATO (584), p. 123.  
*Cerithiopsis bermudensis*, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x, p. 538, fig.: *C. caledonicus*, New Caledonia; EUTHYME, Bull. Soc. malac. France ii, p. 255 [1885]: n. spp.  
*Cinctella*, n. gen. for *Cerithium trilineatum*, Phil.; MONTEROSATO (584), p. 123.  
*Colpospira*, n. sect. of *Turritella*, type *T. runcinata*, Watson; DONALD, P. Malac. Soc. London iv, p. 51.  
†*Coronaria*, Kittl, renamed *Stephanocosmia*, q. v.  
†*Euthystylus*, n. n. for *Orthostylus*, Kittl nec Beck; COSSMANN (582), p. 63.  
†*Goniogyra*, Kittl, renamed *Goniospira*, q. v.  
†*Goniospira*, n. n. for *Goniogyra*, Kittl nec Agassiz; COSSMANN (582), p. 62.  
†*Heterogyra*, n. gen. for *H. ladina*, n. sp., Trias; KITTL, Ann. Hofmus. Wien xiv, p. 184.  
*Metaxia*, n. gen. for *Cerithium rugulosum*, Sby.; MONTEROSATO (584), p. 125.  
*Modulus guernei*, Cape Verd Is.; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 197, fig.: n. sp.  
†*Orthostylus*, Kittl, renamed *Euthystylus*, q. v.  
*Parastilbe*, n. n. for *Stilbe*, Jeffreys nec DeKay; COSSMANN, Rev. paleozool. iv, p. 43.  
*Platycolpus*, doubtfully proposed as n. sect. of *Turritella* for *T. quadrata*, n. sp.; DONALD, P. Malac. Soc. London iv, p. 54.  
†*Pustularia*, Koken, renamed *Pustulifer*, q. v.  
†*Pustulifer*, n. n. for *Pustularia*, Koken nec Swainson; COSSMANN (582), p. 65.  
*Rhinocoryne*, n. subgen. of *Potamides*, type *P. pacificus*, Sow.; MARTENS, Biol. Centr.-Amer. pp. 567, 574.  
*Seila attenuata*, N. S. Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 91, fig.: n. sp.  
*Sirius*, n. gen. for *Raulinia badia*, T. Woods; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 88.  
†*Stephanocosmia*, n. n. for *Coronaria*, Kittl nec Fabr.; COSSMANN (582), p. 62.

- Stilbe*, Jeffreys, renamed *Parastilbe*, q. v.  
*Thylacodes caperatus*, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 94: n. sp.  
*Turritellidae*, on the family, with n. var. of *T. quadrata*; DONALD, P. Malac. Soc. London iv, pp. 47-55: Anatomy of *T. communis* and radula of *T. australis*; RANDLES, t. c. pp. 56-65.  
*Turritella atkinsoni*, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 95: *T. kowiensis*, The Kowie; SOWERBY, P. Malac. Soc. London iv, p. 6, fig.: *T. (Colpospira*, n. sect.) *smithiana*, *crenulata*, off Sydney, p. 53, *godeffroyana*, *quadrata* [*Platycolpus* doubtfully proposed for this as n. sect., p. 54], Bass Strait, p. 53; DONALD, P. Malac. Soc. London iv, figg.: n. spp.

PSEUDOMELANIIDÆ, MELANIIDÆ, PLEUROCERIDÆ, LITTORINIDÆ,  
and FOSSARIDÆ.

- Brotella*, Rovereto, renamed *Paracrostoma*, q. v.  
*Cenchritia*, n. subgen. of *Littorina*, type *L. muricata*, Linn.; MARTENS, Biol. Centr.-Amer. pp. 575, 578.  
†*Centrogonia*, n. gen. for *C. cureti*, n. sp., Cretaceous, France; COSSMANN, C.R. Ass. France 1899, p. 400.  
*Couthouyia aculeata*, Torres Straits; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 89, fig.: n. sp.  
*Cremnoconchus messageri*, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, pp. 116, 449, fig.: n. sp.  
†*Eustylus*, Kittl, renamed *Trypanostylus*, q. v.  
*Fossarus sydneyensis*, N. S. Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 89, fig.: n. sp.  
*Goniobasis plebeius*, note on, with fig.; PILSBRY, P. Ac. Philad. 1900, p. 458.  
†*Gradiella*, n. subgen. of *Celostylina* for *Chemnitzia gradata*, Hoernes, etc., Trias; KITTL, Ann. Hofmus. Wien xiv, p. 146.  
*Io*, variation in; ADAMS, P. Amer. Ass. xlix, p. 208.  
*Lacuna puteolus*, notes on; BYNE, J. Conch. ix, p. 341.  
*Lavigeria lechaptosini*, Ancey, is a variety of *L. nassa*; DAUTZENBERG, J. Conchyl. xlviii, p. 81.  
*Lithasia obovata*, note on growth of; WALKER, Nautilus xiii, p. 97.  
*Littorina*, radula of; TEILMAN-FRIIS (522): TEMPÈRE (523).  
*Melania reducta*, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, pp. 118, 451, fig.: *M. indragirica*, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900, p. 10: *M. ponthiervillensis*, p. xv, *nyangweensis*, *depravata*, p. xvi, *nsendweensis*, p. xvii, *soror*, *consobrina*, p. xviii, *kinshassensis*, p. xix, Congo Free State; DUPUIS & PUTZEYS, Ann. Soc. malac. Belgique xxxv, Bull. figg.: n. spp.  
†*Mesospira*, n. subg. of *Pseudomelania*, type *Phasianella leymeriei*, d'Arch.; COSSMANN, Bull. Soc. geol. France xxvii, p. 559.  
†*Microchilus*, Kittl, renamed *Pseudocochlearia*, q. v.  
*Micronyassa*, n. gen. for *Melania turritispira*, Smith, and others; BOURGUIGNAT, Bull. Soc. malac. France vi, p. 24 [1889].  
*Nyasella*, n. gen. for *N. smithi*, n. sp., and others; BOURGUIGNAT, t. c. p. 17 [1889].  
*Nyassia*, n. gen. for *Melania nodocincta*, Dohrn, and others; BOURGUIGNAT, t. c. p. 5 [1889].  
*Nyassomelania*, n. gen. for *N. leia*, n. sp., and others; BOURGUIGNAT, t. c. p. 30 [1889].  
†*Ochetochilus*, n. g., type *O. subvaricosus*, n. sp., from the Bathonian of Saint-Gaultier; COSSMANN, Bull. Soc. geol. France xxvii, p. 556.

*Pachycheilus*, see last year at p. 67.

*Paracrostoma*, n. n. for *Brotella* (1899) nom. preocc.; COSSMANN, Rev. paleozool. iv, p. 42.

*Pleurocera elevatum*, note on, with figg.; PILSBRY, P. Ac. Philad. 1900, p. 457.

†*Pseudocochlearia*, n. n. for *Microchilus*, Kittl nec Blanch.; COSSMANN (582), p. 64.

*Pseudorbis*, n. gen. for *Fossarus granulus*, Brugn.; MONTEROSATO (584), p. 109.

†*Trypanostylus*, n. n. for *Eustylus*, Kittl nec Schönh.; COSSMANN (582), p. 63.

†*Tuberculopleura*, n. g. for *T. kulogoræ*, n. sp., and others; JAKOWLEW, Trudui geol. Kom. xv, No. 3, 1899, p. 58.

# SOLARIIDÆ, RISSOIDÆ, HYDROBIIDÆ, VIVIPARIDÆ, VALVATIDÆ, AMPULLARIIDÆ, and ASSIMINEIDÆ.

*Actonia*, n. sect. of *Alvania* for *Rissoa testæ*, A. & M., etc.; MONTEROSATO (584), p. 61.

*Ampullaria brohardi* is a monstrosity, and *pagoda* a synonym, of *polita*; SMITH, P. Malac. Soc. London iv, p. 40.

*Architectonicidæ*, proposed to replace *Solariidæ*; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 201.

*Assiminea andrewsiana*, Christmas Island; SMITH, Monograph of Christmas Island, p. 59, fig.: n. sp.

*Chileutomia*, see under *Menon* in *Eulimidæ*.

*Lithoglyphus tonkinianus*, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, pp. 117, 450, fig.: n. sp.

*Paludestrina norfolkensis*, Norfolk I.; SYKES, P. Malac. Soc. London iv, p. 146, fig.: n. sp.

*Petterdiana thaanumi*, Queensland; PILSBRY, Nautilus xiii, p. 144: n. sp.

*Pomatiopsis hirasei*, Japan; PILSBRY, op. cit. xiv, p. 12: n. sp.

*Pusillina*, n. gen. for *Rissoa pusilla*, Phil.; MONTEROSATO (584), p. 56.

*Rissoia*, radula of; TEILMAN-FRIIS (522): *R. perexigua*, n. n. for *R. minutissima*, Woods nec Michelin; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 100: *R. maccoyi*, T. Woods, *tenisoni*, Tate, figd.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 505.

*Rissoa (Manzonina) minuscula*, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x, p. 540, fig.: *R. (Apicularia) demessa*, p. 98, (*A.*) *apicilirata*, (*Pusillina*) *discrepanis*, p. 99, Tasmania, (*Amphithalamus*) *simsoni*, Tasmania and Victoria, (*Cingula*) *rubicunda*, (*Nodulus*) *pellucida*, Tasmania, p. 100; TATE & MAY, Tr. R. Soc. S. Austral. xxiv: n. spp.

*Rissoia buliminoides, consobrina*, Tasmania; TATE & MAY, t. c. p. 101: n. spp.

*Stenothyra messengeri*, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, pp. 116, 448, fig.: n. sp.

*Valvata tunkunorica*, Nan-shan; STURANY, Denk. Ak. Wien lxx, p. 39, fig.: n. sp.

*Vivipara auriculata*, of which *V. rusiostoma* is a synonym, figd.; SMITH, J. Malac. vii, p. 159.

*Vivipara penangensis*, Penang; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900, p. 18: *V. wingatei*, Hunan; SMITH, J. Malac. vii, p. 158, fig.: n. spp.

## CYCLOPHORIDÆ and CYCLOSTOMATIDÆ.

- Acroptychia pyramidalis*, Madagascar; SYKES, J. Malac. vii, p. 165, fig.: n. sp.
- Adelopoma*, note on; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 154.
- Alycæus requiescens*, Mabilie, is a synonym of *A. pilula*, Gld.; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, p. 457.
- Alycæus (Orthalycæus) sumatranus*, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900, p. 6: *A. (Dioryx) major*, pp. 118, 452, (*D. messengeri*, pp. 119, 453, (*D. compactus*, pp. 119, 454, (*D. vanbuensis*, pp. 120, 455, (*Charax) fraterculus*, pp. 120, 457, (*C. heudei*, pp. 121, 458, Tonkin; BAVAY & DAUTZENBERG, J. Conchyl. xlviii, figg.: *A. hari-mensis*, *reinhardti*, p. 381, *melanopoma*, *hirasei*, p. 382, Japan; PILSBRY, P. Ac. Philad. 1900 : n. spp.
- Charax*, Benson nec Risso, renamed *Dicharax*, q.v.
- Chondropoma martensianum*, Mexico; PILSBRY, Nautilus xiii, p. 140 : n. sp.
- Cælopoma*, A. Ad. nec Agassiz, renamed *Spiropoma*, q.v.
- Cyclophorus songmaensis*, Morlet, is, from the type, a synonym of *C. dodrana*, Mabilie; DAUTZENBERG, J. Conchyl. xlviii, p. 70.
- Cyclophorus* [appears an *Aperostoma*] *underwoodi*, Costa Rica; DA COSTA, P. Malac. Soc. London iv, p. 87, fig.: *C. egregius*, p. 4, *pliciferus*, p. 5, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900 : n. spp.
- Cyclostoma elegans*, radula; TEMPERE (523).
- Cyclostoma ischuraularum*, Italy, Sicily, and Algeria; FAGOT, Bull. Soc. malac. France vi, p. 167 [1889]: n. sp.
- Cyclotus* (?) *micron*, Japan; PILSBRY, Nautilus xiv, p. 12: n. sp.
- Diadema*, Pease, should be replaced by *Garrettia*, Pease; MOELLENDORFF, J. Malac. vii, p. 118.
- Dicharax*, n. n. for *Charax*, Bens. nec Risso; KOBELT & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 186.
- Diplommantina pusilla*, n. var.; PILSBRY, P. Ac. Philad. 1900, p. 382.
- Diplommantina belonis*, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 137: *D. oreadis*, Queensland; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 512, fig.: *D. uzenensis*, Japan; PILSBRY & GULICK, Nautilus xiv, p. 88 : n. spp.
- Gastroptychia*, n. n. for *Paxillus*, Adams nec Michean; KOBELT & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 186.
- Lagochilus costulatum*, Annam; MOELLENDORFF, t. c. p. 134: n. sp.
- Leptopoma (Trocholeptopoma) annamiticum*, Annam; MOELLENDORFF, t. c. p. 134: *L. (Trocholeptopoma) mitchella*, Borneo; SMITH, P. Malac. Soc. London iv, p. 42, fig.: n. spp.
- Metalycæus*, n. sect. of *Alycæus* for *A. melanopoma*, *hirasei*, n. spp.; PILSBRY, P. Ac. Philad. 1900, p. 382.
- Omphalotropis brencleyi*, p. 145, *suteri*, p. 146, Norfolk I.; SYKES, P. Malac. Soc. London iv, figg.: n. spp.
- Paratropis*, Bttg nec Simon, renamed *Spiratropis*, q.v.
- Paxillus*, Adams nec Michean, renamed *Gastroptychia*, q.v.
- Pomatias*, Studer, note on; MARTENS, Nachrbl. Deutsch. malak. Ges. 1891, p. 143.
- Pterocyclus marioni*, Ancey, equals *P. housei*, Haines; DAUTZENBERG, J. Conchyl. xlviii, p. 70.
- Pupina bilobata*, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900, p. 7: n. sp.
- Pupinella fruhstorferi*, West Japan; MOELLENDORFF, t. c. p. 110: n. sp.
- Quadrasiella ammonitella*, Caroline Islands; MOELLENDORFF, J. Malac. vii, p. 120: n. sp.

- Siphonocyclus*, n. sect. of *Procydotus* for *P. borealis*, Mildf., and others; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 136.  
*Spiraculum assamense*, Assam; FULTON, Nautilus xiv, p. 87: n. sp.  
*Spiratropis*, n. n. for *Paratropis*, Btg. nec Simon; KOBELT & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 186.  
*Spiropoma*, n. n. for *Calopoma*, A. Ad. nec Agassiz; KOBELT & MOELLENDORFF, t. c. p. 186.

## TRUNCATELLIDÆ.

- Blanfordia*, note on; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900, p. 153.

## CAPULIDÆ, NATICIDÆ, and XENOPHORIDÆ.

- Amauropsis moerchi*, figd.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 94.  
*Capulus californicus*, California; DALL, Nautilus xiii, p. 100: n. sp.  
*Cheilea*, Modeer, should be used for group of *Patella equestris*, L.; DALL, op. cit. xiv, p. 45.  
*Natica subcostata*, T. Woods, figd.; PRITCHARD & GATLIFF, P. Soc. Victoria xiii, p. 132: *N. tenisoni*, n. n. for *N. nana*, Woods nec Möller; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 94.  
*Natica shorehami*, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria xiii, p. 131, fig.: *N. labrotincta*, Cebu; SOWERBY, P. Malac. Soc. London iv, p. 127, fig.: *N. jousseaumei*, New Caledonia; EUTHYME, Bull. Soc. malac. France ii, p. 239 [1885]: n. spp.  
*Vanikoro gracilis*, Braz., is a *Couthouyia*, with fig.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 506.  
*Xenophora*, figd.; CHUN (87), p. 366.

## PTENOGLOSSA.

## SCALIDÆ.

- Crosseia labiata*, T. Woods, figd.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 500.  
*Scala electa*, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x, p. 536, fig.: n. sp.  
*Scalaria (Acrilla) minutula*, Tasmania, S. Australia, and Victoria; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 95: n. sp.

## GYMNOGLOSSA.

## EULIMIDÆ and PYRAMIDELLIDÆ.

- Acicularia*, n. sect. for *Eulima beryllina*, Monts., etc.; MONTEROSATO (584), p. 102.  
*Auristomia*, n. sect. for *Odostomia erjaveciana*, Brus., etc.; MONTEROSATO (584), p. 95.  
*Brachystomia*, n. sect. for *Odostomia rissoides*, Hanley, etc.; MONTEROSATO (584), p. 94.  
*Elusa subulata*, A. Ad., figd.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 504.  
*Eulima (Vitrolina) dautzenbergi*, Oran; PALLARY, J. Conchyl. xlviii, p. 339, fig.: *E. hypsela, amblytera*, p. 526, *engonia, compea*, p. 527, *atypha*, p. 528, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x,

- figg.: *E. inflata*, p. 95, *mayii*, Tate, Tasmania, *tryoni*, p. 96, S. Australia, Victoria, and Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. xxiv : n. sp.
- Eulimida*, monograph completed; CLESSIN in MARTINI & CHEMNITZ (311).
- Jordaniella*, n. gen. for *Odostomia nivosa*, Mont.; CHASTER, P. Irish Ac. v, p. 20 [1899].
- Leiostraca*, Adams, renamed *Subularia*, q.v.
- Leucotina helvola*, Queensland; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 510, fig. : n. sp.
- Megastomia*, n. sect. for *Odostomia conspicua*, Alder; MONTEROSATO (584), p. 94.
- Menon*, n. gen. for *M. anceps*, n. sp., N. S. Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 90, fig. : Genus is a synonym of *Chileutomia*; HEDLEY, t. c. p. 506.
- Mucronalia philippinarum*, *cylindrica*, Cebu; SOWERBY, P. Malac. Soc. London iv, p. 127, figg. : n. spp.
- Niso*, monograph by CLESSIN in MARTINI & CHEMNITZ (311).
- Niso balticata*, The Kowie; SOWERBY, P. Malac. Soc. London iv, p. 6, fig. : n. sp.
- Odontostomia deplexa*, Tasmania, S. Australia, and Victoria, *variana*, p. 97, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. xxiv : n. spp.
- Odostomia petterdi*, n. n. for *Obeliscus tasmanica*, Petterd, preocc.; GATLIFF, Victorian Natural. xvii, p. 54.
- Odostomia metcalfei*, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria xiii, p. 136, fig. : *O. verticalis*, Bantry Bay; MARSHALL, J. Conch. ix, p. 333: *O. jonesii*, p. 531, *lubrica*, p. 532, (*Cyclodostomia*) *didyma*, (*Evalea*) *somersi*, p. 533, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x, figg. : *O. kraussii*, p. 155, *cionelloides*, *curta*, Japan, p. 116, *manilensis*, Manila, p. 118, *hilgendorfi*, Japan, *muelleri*, Brazil, p. 119, *glabra*, Japan, *panamensis*, Panama, p. 120, *sitkaensis*, Sitka, p. 121, *schützii*, p. 123, *flavescens*, Makao, p. 125; CLESSIN in MARTINI & CHEMNITZ (311), figg. : n. spp.
- Parthenia adamsii*, p. 187, n. n. for *P. fenestrata*, A. Adams nec Forbes, *monterosatii*, p. 188, n. n. for *P. brevicula*, Monterosato nec Jeffreys; CLESSIN in MARTINI & CHEMNITZ (311).
- P. benguelensis*, p. 192, Benguela, Sumatra; CLESSIN in MARTINI & CHEMNITZ (311), fig. : n. sp.
- Pseudorissoina*, n. gen. for *Stylifer tasmanica*, Woods; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 98.
- Pyramidellida*, monograph commenced; CLESSIN in MARTINI & CHEMNITZ (311).
- Pyrgisculus*, n. sect. for *Odostomia scalaris*, Phil.; MONTEROSATO (584), p. 88.
- Pyrgolidium*, n. sect. for *Odostomia roseum*, Monts.; MONTEROSATO (584), p. 89.
- Pyrgostelia*, n. sect. for *Odostomia rufa*, Phil., etc.; MONTEROSATO (584), p. 89.
- Pyrgostylus*, n. sect. for *Turbonilla striatula* (L.); MONTEROSATO (584), p. 90.
- Scalenostoma striatum*, Queensland and Torres Straits; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 507, fig. : n. sp.
- Spiralina*, n. gen. for *Odostomia spiralis*, Mont.; CHASTER, P. Irish Ac. v, p. 20 [1899].
- Stylifer loaderi*, figd.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 92: *S. petterdi*, n. n. for *S. robusta*, Petterd nec Pease; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 96.
- Stylifer immaculata*, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria xiii, p. 137, fig. : n. sp.

- Subularia*, n. n. for *Leiostraca*, Adams, nec *Leiostracus*, Albers; MONTEROSATO (584), p. 103.
- Syrnola angasi*, n. n. for *S. gracillima*, Smith nec A. Adams; CLESSIN in MARTINI & CHEMNITZ (311), p. 67: *S. petterdi*, n. n. for *Obeliscus tasmanicus*, Woods, nec *S. tasmanica*, Petterd; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 97.
- Syrnola harrisoni*, p. 96, *punctospira*, p. 97, Tasmania; TATE & MAY, t. c. : n. spp.
- Tiberia*, Jeffreys, renamed *Tiberirola*, q.v.
- Tiberirola*, n. n. for *Tiberia*, Jeffreys nec Monterosato; COSSMANN, Rev. paleozool. iv, p. 44.
- Trabecula*, n. sect. for *Odostomia jeffreysiana*, Seguenza; MONTEROSATO (584), p. 86.
- Tragula*, n. sect. for *Odostomia fenestrata*, Forbes; MONTEROSATO (584), p. 86.
- Turbonilla admiranda*, n. n. for *Elusa bifasciata*, Woods, preocc.; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 98: *T. kraussi*, n. n. for *T. lactea*, Krauss nec Linn.; CLESSIN in MARTINI & CHEMNITZ (311), p. 135.
- Turbonilla (Ondina) micra*, p. 134, *brevia*, p. 135, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria xiii, figg.: *T. tincta*, The Kowie; SOWERBY, P. Malac. Soc. London iv, p. 5, fig.: *T. valida*, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. i, p. 528, fig.: *T. maltzani*, p. 160, Goree, *puncturata*, Rio Janeiro, *frutichi*, p. 163, Raluit I., *gracilis*, p. 164, Cuba, *rentsii*, W. Indies, *alta*, p. 165, Japan, *subulata*, Amboina, *martensii*, p. 167, Timor, *striata*, China, *iheringi*, p. 168, S. Brazil, *portoricensis*, Brazil, *makaoensis*, p. 169, China, *chinensis*, p. 170, Makao, *pulchra*, p. 171, Jamaica, *iheringi*, p. 174, S. Brazil; CLESSIN in MARTINI & CHEMNITZ (311), figg.: n. spp.
- Vireolina*, n. sect. for *Eulima incurva*, Ren., &c.; MONTEROSATO (584), p. 100.

## SCUTIBRANCHIATA.

## RHIPHIDOGLOSSA.

## DESCOPENIDÆ AND HELICINIDÆ.

- Caloptisma*, n. sect. of *Helicina* for *H. rostrata* and others; CROSSE & FISCHER, Miss. Sci. Mexique, Moll. ii, p. 405 [1893].
- Chersodespenna*, n. subgen. of *Despenna*, type *D. cinnamomea*, n. sp.; SYKES, P. Malac. Soc. London iv, p. 136.
- Despenna* (*Chersodespenna*, n. subgen.) *cinnamomea*, Ecuador; SYKES, t. c. p. 136, fig.: n. sp.
- Georissa japonica*, Japan; PILSBRY, P. Ac. Philad. 1900, p. 384: *G. rufula*, Caroline Islands; MOELLENDORFF, J. Malac. vii, p. 121: *G. chrysacme*, p. 137, *decora*, *exarata*, p. 138, Annam; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1900: n. spp.
- Helicina sundana*, n. n. for *H. exserta*, Martens nec *exerta*, Pfr.; ANCEY, Nautilus xiv, p. 83.
- Helicina iguapensis*, p. 393, *inæquistriata*, p. 394, Brazil; PILSBRY, P. Ac. Philad. 1900: n. spp.
- Linidiella*, n. gen. for *Proserpina swifti*, Blnd.; JOUSSEAUME, Mem. Soc. zool. France i, p. 256 [1889; apparently identical with *Chersodespenna*, q.v.].
- Oxyrhombus*, n. sect. of *Helicina* for *H. ghiesbreghtii* and others; CROSSE & FISCHER, Miss. Sci. Mexique, Moll. ii, p. 399 [1893].

*Proserpinacea*, notes on ; SYKES, P. Malac. Soc. London iv, pp. 137 & 138.  
*Pyrgodomus*, n. sect. of *Helicina* for *H. chryseis* ; CROSSE & FISCHER, Miss.  
 Sci. Mexique, Moll. ii, p. 440 [1893].

## NERITIDÆ, TROCHIDÆ, TURBINIDÆ, AND CYCLOSTREMATIDÆ.

- Calliostoma veliei*, Florida ; PILSBRY, Nautilus xiii, p. 128 : n. sp.  
*Caragolus*, n. n. for *Trochocochlea*, auct. nec Klein ; MONTEROSATO (584),  
 p. 43.  
*Chlorostoma hidalgoi, orbignyanum*, Patagonia ; PILSBRY, Nautilus xiii,  
 p. 111 : n. spp.  
*Cyclostrema angeli*, T. Woods, figd. ; HEDLEY, P. Linn. Soc. N. S. Wales  
 xxv, p. 503.  
*Cyclostrema porcellana*, Tasmania ; TATE & MAY, Tr. R. Soc. S. Austral.  
 xxiv, p. 101 : *C. cristata, dispar*, Cebu ; SOWERBY, P. Malac. Soc.  
 London iv, p. 128, figg. : n. spp.  
*Gibbula (Enida) perspectiva*, Pondoland ; SOWERBY, t. c. p. 6, fig. : n. sp.  
*Leptothyra viridula*, Cebu ; SOWERBY, t. c. p. 128, fig. : n. sp.  
*Liota hedleyi*, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xii,  
 p. 106, fig. : *L. rostrata, philtata*, Queensland ; HEDLEY, P. Linn. Soc.  
 N. S. Wales xxv, p. 502, figg. : n. spp.  
*Lodderia minima*, figd. ; HEDLEY, t. c. p. 94.  
*Nerita melanotragus*, Smith, note on ; HEDLEY, t. c. p. 500.  
 † *Palæocollonia*, n. gen. for *P. lavigata* (Mustr.), Trias ; KITTL, Ann.  
 Hofmus. Wien xiv, p. 22.  
 † *Paratrochus*, n. gen. for *Tectus margine-nodosus*, J. Böhm, Trias ; KITTL,  
 t. c. p. 24.  
*Petropoma*, Gabb, is a synonym of *Leptothyra* ; H. A. P., Nautilus vii,  
 p. 84 [1893].  
*Porcupinia*, n. n. for *Tharsis*, Jeffreys nec Gieb. ; COSSMANN, Rev. paleozool.  
 iv, p. 43.  
*Synaptocochlea preta*, radula ; VERRILL & BUSH, Tr. Connect. Ac. x,  
 p. 525.  
*Tainostoma orbitum*, Torres Straits ; HEDLEY, P. Linn. Soc. N. S. Wales  
 xxv, p. 96, fig. : n. sp.  
*Thalotia dubia*, T. Woods, is a synonym of *T. conica*, Gray ; GATLIFF,  
 Victorian Natural. xvii, p. 113.  
*Tharsis*, Jeffreys, renamed *Porcupinia*, q.v.  
*Trochus*, note on anatomy ; HALLER, Zool. Anz. xxiii, p. 189 : *T. zizy-*  
*phinus*, radula ; TEMPÈRE (523).  
*Turbo tricarinulatus*, Cape of Good Hope ; EUTHYME, Bull. Soc. malac.  
 France ii, p. 252 [1885] : n. sp.  
*Vitrinella simplex*, Cebu ; SOWERBY, P. Malac. Soc. London iv, p. 128, fig. :  
 n. sp.

## HALIOTIDÆ, PLEUROTOMARIIDÆ, and FISSURELLIDÆ.

- † *Codinella*, n. gen. for *Trochus generelii*, Stoppani, Trias ; KITTL, Ann.  
 Hofmus. Wien xiv, p. 15.  
*Fissurella (Lucapinella) henseli*, South Brazil ; MARTENS, Nachrbl. Deutsch.  
 malak. Ges. 1900, p. 187.  
*Fissurella linteus*, animal ; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 95.  
*Haliotis*, radula ; TEMPÈRE (523) : *H. fulgens*, variety ; STEARNS, P. U. S.  
 Mus. xxii, p. 140.  
*Lucapinella versutus*, Cape Verd Is. ; DAUTZENBERG, Mem. Soc. zool.  
 France xiii, p. 217, fig. : n. sp.



- Phenacolepas*, catalogue of genus ; PILSBRY, *Nautilus* xiv, pp. 61-63.  
*Pleurotomaria beyrichii*, living specimen ; SCHEDEL, *Nachrbl. Deutsch. malak. Ges.* 1900, p. 18: *P. salmiana*, note on with figure ; F[ISCHER], *J. Conchyl.* xlviii, pp. 102 & 103.  
*Puncturella kestereni*, N. S. Wales ; HEDLEY, *P. Linn. Soc. N. S. Wales* xxv, p. 499, fig.: n. sp.  
*Zeidora tasmanica*, figd.; HEDLEY, t. c. p. 93: *Z. lodderei*, n. n. for *Z. tasmanica*, Hedley nec Beddome ; TATE & MAY, *Tr. R. Soc. S. Austral.* xxiv, p. 101.

## DOCOGLOSSA.

Hermaphroditism ; WILCOX, *Science* xii, p. 230.

## ACMÆIDÆ and PATELLIDÆ.

- Acmaea testudinalis*, anatomy ; WILCOX, *Science* xi, p. 171.  
 †*Acrorea*, n. gen. for *Nacella baylei*, COSSM., *Tertiary* ; COSSMANN (579), p. 131.  
*Bathysciadium conicum*, n. gen. and sp., Azores, forms also n. fam. *Bathysciadidæ* ; DAUTZENBERG & FISCHER, *Bull. Soc. zool. France* xxiv, p. 207, fig.: Note on anatomy ; PEISENER, t. c. p. 209: Note on ; DALL, *Science* xi, p. 914: Is a synonym of *Lepeta costulata*, Loc., but the genus is new ; DAUTZENBERG & FISCHER, *J. Conchyl.* xlviii, p. 460.  
*Helcion pellucidus* and *H. corneus*, habits and differences ; MARTEL (298).  
*Nacella parva* var. *tasmanica* is a species ; TATE & MAY, *Tr. R. Soc. S. Austral.* xxiv, p. 102.  
*Patella*, radula ; TEMPÈRE (523).  
 †*Randomia*, n. gen., type *R. aurora*, n. sp., Etcheminian ; MATTHEW, *Bull. Soc. N. Brunswick* iv, p. 190.

## III. SCAPHOPODA.

- Cadulus laevis*, Braz., figd. ; HEDLEY, *P. Linn. Soc. N. S. Wales* xxiv, p. 499.  
*Cadulus (Gadilia) spretus*, Tasmania ; TATE & MAY, *Tr. R. Soc. S. Austral.* xxiv, p. 102: n. sp.  
*Dentalium dollfusii*, COSSMANN [1899], is a synonym of *D. inaequicostatum*, Dautz. ; COSSMANN, *Rev. paleozool.* iv, p. 186.  
*Pseudantalis*, n. gen. for *Dentalium rubescens*, Desh. ; MONTEROSATO (584), p. 32.

## IV. PELECYPODA.

On the 'eyes' in some Pelecypoda ; HESSE (223).  
 Many critical notes with new subgenera and sections ; DALL (121).

## SEPTIBRANCHIATA.

[None.]

## EULAMELLIBRANCHIATA.

## ANATINACEA.

*Alicia*, Angas, renamed *Thraciopsis*, q.v.

†*Endomargarus*, n. gen., type *Lyonsia heberti*, Desh.; COSSMANN (580), p. 58.

*Thraciopsis*, n. n. for *Alicia*, Angas nec Johnson; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 103.

## PHOLADACEA.

[None.]

## MYACEA and CARDIACEA.

†*Acrosterigma*, n. sect. of *Trachycardium*, type *C. dalli*, Heilprin; DALL, Tr. Wagner Inst. iii, p. 1073. [Also in P. U. S. Mus. xxiii, p. 383.]

*Cardiida*, synopsis of family; DALL (123).

†*Cuneocorbula*, n. sect. of *Corbula*, first species *C. biangulata*, Desh.; COSSMANN (580), p. 49.

*Dinocardium*, n. sect. of *Cerastoderma*, type *Cardium magnum*, Born; DALL, Tr. Wagner Inst. iii, p. 1074. [Also in P. U. S. Mus. xxiii, p. 384.]

†*Disaricardium*, n. gen. for *Cardium discrepans*, Bast.; DOLLFUS & DAUTZENBERG, Feuille Natural. 1886, p. 95 [1886].

†*Fabagella*, n. gen., type *Corbula faba*, Desh.; COSSMANN (580), p. 53.

*Hemicardium tegulatum*, hab. unknown; DAUTZENBERG, J. Conchyl. xlviii, p. 5, fig.: n. sp.

†*Loxocardium*, n. sect. of *Cardium*, first species *C. formosum*, Desh.; COSSMANN (580), p. 172.

†*Neoropomya*, n. gen. for *Corbula argentea*, Lam.; COSSMANN (580), p. 58.

*Parvicardium*, n. sect. of *Cardium* for *C. parvum*, Phil., etc.; MONTEROSATO (584), p. 19.

†*Plagiocardium*, n. sect. of *Cardium*, first species *C. granulosum*, Lam.; COSSMANN (580), p. 168.

*Trigoniocardia*, n. sect. of *Fragum*, type *Cardium graniferum*, Sby.; DALL, Tr. Wagner Inst. iii, p. 1075. [Also in P. U. S. Mus. xxiii, p. 384.]

## VENERACEA and TELLINACEA.

*Aeretica*, n. sect. of *Strigilla*, type *S. senegalensis*, Hanley; DALL, Tr. Wagner Inst. iii, p. 1038.

†*Arceopagiopsis*, n. sect. of *Tellina*, first species *T. pustula*, Desh.; COSSMANN (580), p. 81.

†*Asaphinella*, n. gen., type *Caprea minima*, Desh.; COSSMANN (580), p. 97.

†*Atopodonta*, n. gen., first species *Venus conformis*, Desh.; COSSMANN (580), p. 110.

†*Callistotapes*, n. subgen. of *Tapes*, type *Venus vetula*, Bast.; SACCO (452), p. 52.

†*Chionella*, n. sect. of *Cytherea*, first species *C. ovalina*, Desh.; COSSMANN (580), p. 117.

- Circenita*, n. gen. of *Veneridae*, type *Venus arabica*, Chem.; JOUSSEAUME, Mem. Soc. zool. France i, p. 208 [1888].
- †*Cyclotellina*, n. sect. of *Tellina*, type *T. lunulata*, Lam.; COSSMANN (580), p. 79.
- Cydrappina*, n. sect. of *Psammacoma* (q.v.), type *Macoma brevifrons*, Say.; DALL, P. U. S. Mus. xxiii, p. 292.
- Cymatoica*, n. subgen. of *Macoma* for two n. spp.; DALL, op. cit. xii, p. 272 [1890].
- †*Dollfusia*, n. gen. for *D. crassa*, n. sp.; COSSMANN (580), p. 128.
- †*Elliptotellina*, n. sect. of *Tellina*, type *T. tellinella*, Lamk.; COSSMANN (580), p. 70.
- Eutapes*, apparently n. sect. of *Venus* for *V. rhomboides*, Penn.; CHIAMENTI, Riv. Ital. Sci. Nat. xx, p. 11.
- †*Garum*, n. sect. of *Psammobia*, type *P. dutemplei*, Desh.; DALL, Tr. Wagner Inst. iii, p. 975.
- Gastranella tumida*, occurrence of; WINKLEY, Nautilus xiv, p. 93: Is nepionic stage of *Petricola*; DALL, Tr. Wagner Inst. iii, p. 1057.
- Grammatodonax*, n. sect. of *Donax* for *D. madagascariensis*, Lam.; DALL, t. c. p. 963.
- Grammatomya*, n. sect. of *Psammobia*, type *P. squamosa*, Lamk.; DALL, P. Ac. Philad. 1898, p. 57. [Dated 1897, but really 1898.]
- Labiosa meridionalis*, figd.; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 497.
- Lutricularia*, n. sect. [of *Scrobicularia*] for *Erycina ovata*, Phil., etc.; MONTEROSATO (584), p. 28.
- †*Macaliopsis*, n. sect. of *Tellina*, first species *T. barrandei*, Desh.; COSSMANN (580), p. 75.
- Macoma phenax*, Virginia and Florida, (*Psammacoma*) *extenuata*, Florida, p. 314, (*P.*) *tagelliformis*, Texas, p. 315, *krausei*, Bering Strait, p. 322, *nitkana*, *alaskana*, Alaska, p. 323, (*indentata* var. ?) *tenuirostris*, California, *panamensis*, Panama Bay, p. 324; DALL, P. U. S. Mus. xxiii, figg. : n. spp.
- Merica*, n. sect. of *Arcopagia* for *Tellina æquistriata*, Say., and others; DALL, Tr. Wagner Inst. iii, p. 1012. [Also in P. U. S. Mus. xxiii, p. 290.]
- †*Myrsopsis*, n. subgen. of *Tapes*, type *Venerupis pernarum*, Bonelli; SACCO (452), p. 57.
- Nuttallia*, n. sect. of *Sanguinolaria*, type *S. nuttalli*, Conrad; DALL, Tr. Wagner Inst. iii, p. 979.
- Oudardia*, n. sect. of *Tellina* for *T. oudardi*, Payr.; MONTEROSATO (584), p. 22.
- †*Parvivenus*, n. subgen. of *Venus*, type *Venus marginatus*, Hoernes; SACCO (452), p. 45.
- Peronæa*, Morch, renamed *Peronidia*, q.v.
- Peronidia*, n. n. for *Peronæa*, Morch, nec *Peronea*, Curtis; DALL, Tr. Wagner Inst. iii, p. 1014. [Also in P. U. S. Mus. xxiii, p. 291.]
- Petricola denticulata*, note on species, of which *Psephis tellimyialis*, Cptr., is a synonym; DALL, Nautilus xiii, p. 121.
- Phyllodina*, n. sect. of *Arcopagia*, type *Tellina squamifera*, Desh.; DALL, Tr. Wagner Inst. iii, p. 1012. [Also in P. U. S. Mus. xxiii, p. 290.]
- Platydona*, n. sect. of *Donax* for *D. finchii*, Sby.; DALL, t. c. p. 963.
- Politiapes*, apparently n. sect. of *Venus* for *Venus aurea*, Gmel.; CHIAMENTI, Riv. Ital. Sci. Nat. xx, p. 11.
- Psammacoma*, n. subgen. of *Macoma*, type *Tellina candida*, Lam.; DALL, Tr. Wagner Inst. iii, p. 1045. [Also in P. U. S. Mus. xxiii, p. 292.]
- †*Psammodonax*, n. gen., type *Psammobia caillati*, Desh.; COSSMANN (580), p. 96.
- †*Psammoica*, n. sect. of *Psammobia*, type *P. appendiculata*, Desh.; DALL, Tr. Wagner Inst. iii, p. 975.

- †*Psammotena*, n. sect. of *Psammobia*, type *P. effusa*, Lam.; DALL, t. c. p. 976.
- Psammotreta*, n. sect. of *Psammacoma* (n. subgen., q.v.), type *Macoma aurora*, Hanley; DALL, t. c. p. 1045. [Also in P. U. S. Mus. xxiii, p. 292.]
- Rombergia*, n. sect. of *Strigilla*, type *S. rombergi*, Morch, DALL, t. c. p. 1038.
- Ruditapes*, apparently n. sect. of *Venus* for *V. decussata*, L.; CHIAMENTI, Riv. Ital. Sci. Nat. xx, p. 13.
- Tapes pullastra* is distinct from *T. geographicus*; WOODWARD, J. Conch. ix, p. 365.
- Scissula*, n. sect. of *Angulus*, type *Tellina decora*, Say; DALL, Tr. Wagner Inst. iii, p. 1014. [Also in P. U. S. Mus. xxiii, p. 291.]
- Scrobiculina*, n. sect. of *Arcopagia*, type *Scrobicularia viridotincta*, Cptr.; DALL, t. c. p. 1013. [Also in P. U. S. Mus. xxiii, p. 290.]
- Semelina*, n. sect. of *Semele*, type *S. nuculoides*, Conrad; DALL, t. c. p. 986.
- †*Taurotapes*, n. subgen. of *Tapes*, type *Venus craverii*, Micht.; SACCO (452) p. 58.
- Tellina* (*Tellinella*) *versluysi*, Santa Marta; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 259, fig.: *T. (Eurytellina?) georgiana*, Gulf of Mexico and St Thomas, p. 310, (*Liotellina*) *iheringi*, Rio la Plata, (*Elliptotellina*) *americana*, North Carolina, p. 311, (*Angulus*) *promera*, Bermuda, (A.) *flagellum*, Brazil, p. 312, (A.) *colorata*, Guadeloupe, (A.) *texana*, Texas and Florida, p. 313, (*Merisca*) *reclusa*, Lower California, p. 315, (*Elliptotellina*) *pacifica*, Panama Bay, (*Phyllodina*) *pristiphora*, Lower California, p. 316, (*Eurytellina*) *leucogonia*, (*Morrella*) *meropsis*, (M.) *amianta*, p. 317, (M.) *paziana*, California, (*Angulus*) *macneilii*, Mexico, p. 318, (A.) *suffusa*, (A.) *cerrosiana*, Lower California, (A.) *panamensis*, Panama Bay, p. 319, (A.) *recurva*, p. 320, (*Peronidia*) *santarosae*, p. 321, California; DALL, P. U. S. Mus. xxiii, figg. : n. spp.
- Tellinidae*, synopsis of family with several species figd.; DALL (122): On cruciform muscle; IHERING (240): *T. carpenteri*, n. n. for *Angulus variegatus*, Cptr., nec *Tellina variegata*, Gmel., *buttoni*, n. n. for *Angulus modestus*, auct. nec Sby.; DALL, P. U. S. Mus. xxiii, p. 320.
- †*Textivenus*, n. sect. of *Venus*, first species *V. texta*, Lam.; COSSMANN (580), p. 109.
- †*Tivolina*, n. sect. of *Cytherea*, first species *C. tellinaria*, Dufour; COSSMANN (580), p. 119.
- †*Venerella*, n. sect. of *Venus*, first species *V. hermonvillensis*, Desh.; COSSMANN (580), p. 106.
- †*Veneritapes*, n. gen. for *Psammobia bervillei*, Desh.; COSSMANN (580), p. 104.

## SUBMYTILACEA.

- Actinonaias*, n. sect. of *Unio* for *U. sapotalensis*, Lea; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 556 [1894].
- Acuticosta*, n. subgen. of *Parreysia*, type *Unio chinensis*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 850.
- Amphinaias*, n. sect. of *Unio* for *U. couchianus*, Lea; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 556 [1894].
- Amygdalonaia*, n. sect. of *Unio* for *U. cognatus*, Lea; CROSSE & FISCHER, t. c. p. 557 [1894].
- †*Angusticardo*, n. sect. of *Sportella*, first species *S. rotundata*, Desh.; COSSMANN (581), p. 13.
- Anodonta cygnea*, varieties with new names; BUCHNER, Jahresh. Ver. Wurttemb. lvi, pp. 60-223: *A. cygnea*, monstrosities; BLOOM J. Malac. vii, pp. 136 & 177.

- Anodonta expressa*, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900, p. 12; *A. richardsoni*, p. 529, N.W. Mexico, *depeza*, p. 538, W. Guatemala; MARTENS, Biol. Centr.-Amer. figg.: *A. bythia*, p. 211, *schroederi*, p. 212, *potimia*, p. 214, *richardi*, p. 215, *perlora*, p. 217, *tricassiniformis*, p. 218, *rhynconella*, p. 219, *journeopsis*, p. 222, Germany; SCHRÖDER (585): *A. josi*, p. 278, *enhydra*, p. 279, *tuberculata*, p. 281, *tumidiformis*, p. 283, *sadoicus*, p. 284, *macropygus*, p. 286, *eupygus*, p. 287, *hypercephalus*, p. 289, *nevesi*, p. 290, *simoesi*, p. 292, Portugal; CASTRO, Bull. Soc. malac. France ii [1885]: *A. epidedacra*, p. 335, *eupelina*, p. 336, *calara*, p. 337, *eucaca*, p. 338, *fedra*, p. 340, *immunda*, p. 341, *misara*, p. 343, *rayopsis*, p. 344, *duregica*, p. 346, *tigurica*, p. 348, *ruvidella*, p. 349, *hypæschra*, p. 351, Lake of Zurich; SERVAIN, t. c. [1885]: n. spp.
- † *Anomalokellia*, n. sect. of *Kellia*, type *K. catalaunensis*, COSSM.; COSSMANN (581), p. 71.
- Aplodon*, Spix, renamed *Spixiconcha*, q. v.
- Arcidens*, n. gen., type *Alasmodonta confragosa*, Say; SIMPSON, P. U. S. Mus. xxii, p. 661.
- Arcidopsis*, n. gen., type *Unio footei*, Theobald; SIMPSON, t. c. p. 861.
- Arotonaias*, n. subgen. of *Unio*, for *U. cyrenoides*, Phil., etc.; MARTENS, Biol. Centr.-Amer. pp. 480, 497.
- Astarte sulcata*, shells with crenulated margins belong to females, those with smooth edges to males; OSTROUMOFF (368).
- Aurora*, n. subgen. of *Parreysia*, type *Unio aureus*, Heude; SIMPSON, P. U. S. Mus. xxii, p. 849.
- Barynaias*, n. sect. of *Unio* for *U. pigerrimus*, C. & F.; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 557 [1894].
- † *Bernayia*, n. gen., first species *B. subarata*, n. sp., Eocene; COSSMANN (581), p. 16.
- Bineurus*, n. sect. of *Pseudodon*, type *Monocondylæa mouhoti*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 839.
- Bullella*, n. subgen. of *Alasmidonta*, type *Margaritana arcula*, Lea; SIMPSON, t. c. p. 672.
- Bulloideus*, n. sect. of *Diplodon*, type *Unio bulloides*, Lea; SIMPSON, t. c. p. 887.
- Cænonaias*, n. sect. of *Unio* for *U. æruginosus*, Morel; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 556 [1894].
- Cafferia*, n. sect. of *Nodularia*, type *Unio caffer*, Krauss; SIMPSON, P. U. S. Mus. xxii, p. 824.
- Callocardia* is equivalent to *Caryatis*; SMITH, P. Malac. Soc. London iv, p. 81.
- Calloniaia*, n. gen., type *Castalia duprei*, Recluz; SIMPSON, P. U. S. Mus. xxii, p. 867.
- Carditella delta*, p. 102, *pectinata*, p. 103, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. xxiv: n. spp.
- Castaliella*, n. gen., type *Castalia sulcata*, Krauss; SIMPSON, P. U. S. Mus. xxii, p. 866.
- Caudiculatus*, n. subgen. of *Hyriopsis*, type *Unio caudiculatus*, Martens; SIMPSON, t. c. p. 581.
- Chamberlainia*, n. gen., type *Unio hainesianus*, Lea; SIMPSON, t. c. p. 582.
- Corbicula obrutschewi*, methoria, Tschili-Li; STURANY, Denk. Ak. Wien lxx, p. 39, fig.: *C. gustaviana*, p. 17, *toba*, p. 18, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900: n. spp.
- Corunculina*, n. sect. of *Lampsilis* for *Unio pareus*, Barnes, and others; SIMPSON in BAKER, Bull. Chicago Ac. iii, p. 109 [1898]: should be *Carunculina*; SIMPSON, P. U. S. Mus. xxii, p. 563.
- Crassitesta*, n. subgen. of *Cristaria*, type *Cristaria radiata*, Simpson [n. n. for *Dipsas parvulus*, Heude, pars]; SIMPSON, t. c. p. 586.

- Ctenodesma*, n. gen., type *Unio borneensis*, Issel; SIMPSON, t. c. p. 852.
- Cuneopsis*, n. gen., type *Unio celtiformis*, Heude; SIMPSON, t. c. p. 804.
- Cyamium mactroides*, Tasmania; TATE & MAY, Tr. R. Soc. S. Austral. xxiv, p. 102: n. sp.
- Cyclomya*, n. subgen. of *Diplodon*, type *Unio funebris*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 885.
- Cylindrica*, n. sect. of *Nodularia*, type *N. cylindrica*, Simpson; SIMPSON, t. c. p. 807.
- Cyrena ingens*, New Hebrides; DAUTZENBERG, J. Conchyl. xlviii, p. 105, fig.: n. sp.
- Cyrtonaias*, n. sect. of *Unio* for *U. berlandieri*, Lea; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 556 [1894].
- †*Cytherocardia*, n. subgen. of *Isocardia*, type *I. cytheroides*, Mayer; SACCO (452), p. 5.
- Dalliella*, n. gen., type *Anodonta purpurea*, Val.; SIMPSON, P. U. S. Mus. xxii, p. 832.
- Delphinonaias*, n. sect. of *Unio* for *U. delphinulus*, Morel.; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 555 [1894].
- Diplodon wagnerianum*, n. n. for *Unio ellipticus*, Wagner nec Barnes, p. 877, *cuprinus*, n. n. for *fragilis*, Sby., preocc., *aureus*, n. n. for *auratus*, Kuster nec Phil., p. 883; SIMPSON, P. U. S. Mus. xxii.
- Diplodonta (Phlyctiderma) puncturella*, Jamaica; DALL, Tr. Wagner Inst. iii, p. 1183, fig.: n. sp.
- Discomya*, n. subgen. of *Quadrula*, type *Unio radulosus*, Drouet & Chaper; SIMPSON, P. U. S. Mus. xxii, p. 802.
- Disconaias*, n. sect. of *Unio* for *U. discus*, Lea; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 556 [1894].
- †*Divarikellia*, n. sect. of *Kellia*, type *K. nitida*, Caillat; COSSMANN (581), p. 67.
- Dreissenia polymorpha* with pearl; BLADEN (48).
- Dromus*, n. gen., type *Unio dromus*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 614.
- Eupera pittieri*, S.W. Costa Rica; MARTENS, Biol. Centr.-Amer. p. 553, fig.: n. sp.
- †*Fulcrella*, n. subgen. of *Anisodonta*, type *Poromya paradoxa*, Desh.; COSSMANN (580), pp. 149, 153.
- Fusconaias*, n. sect. of *Quadrula*, type *Unio trigonus*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 784.
- Gibbosula*, n. gen., type *Mya crassa*, Wood; SIMPSON, t. c. p. 804.
- Glabaris philippianus*, n. n. for *Anodonta subsinuata*, Phil. nec Sby., p. 919, *umbonatus*, n. n. for *Anodon ciconia*, Sby., pars, p. 926; SIMPSON, t. c.
- Glabaris falsus*, Orinoco River; SIMPSON, t. c. p. 932: n. sp.
- †*Goossensia*, n. gen. for *G. plicatuloides*, n. sp., Tertiary; COSSMANN (579), p. 113.
- Grandidieria*, n. gen. of *Unionida*, with several n. spp., Lake Tanganyika; BOURGUIGNAT, Bull. Soc. malac. France ii, p. 1 [1885].
- Graphonaias*, n. sect. of *Unio* for *U. medellinus*, Lea; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 557 [1894].
- Hyriana*, n. subgen. of *Hyria*, type *Unio ortonii*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 872.
- Hyriopsis bialatus*, n. n. for *Unio delphinus*, Gruner nec Spengler; SIMPSON, t. c. p. 579.
- Iheringella*, n. n. for *Plagiodon*, Lea nec Dumeril; PILSBRY, Nautilus vii, p. 30 [1893].
- Læurostris*, n. subgen. of *Diplodon*, type *Unio stagnorum*, Daut.; SIMPSON, P. U. S. Mus. xxii, p. 894.



- Lamellidens*, n. gen., type *Unio marginalis*, Lam.; SIMPSON, t. c. p. 854:  
*L. canefriatus*, n. n. for *Unio protensus*, T. Canefri nec Lea; SIMPSON,  
 t. c. p. 857.
- Lamprotula*, n. subgen. of *Quadrula*, type *Chama plumbea*, Chemn.;  
 SIMPSON, t. c. p. 796.
- Lampsilis binominatus*, n. n. for *Unio lineatus*, Lea nec Val., p. 528,  
*lividus*, n. n. for *Unio testudineus*, Rve. nec Morel., p. 571; SIMPSON,  
 t. c.: *L. brittsi* is a var. of *L. breviculus*; SIMPSON, t. c. p. 533.
- Lampsilis simpsoni*, Arkansas; FERRISS, Nautilus xiv, p. 38: *L. fal-*  
*laciosus* (Smith), Mississippi, p. 74, *australis*, Alabama, *mearnsi*,  
 Texas, p. 75, *brittsi*, loc. not stated; SIMPSON, P. Ac. Philad. 1900,  
 figg.: n. spp.
- Lapidus*, n. sect. of *Unio*, type *U. lapidosus*, Kob.; SIMPSON, P. U. S.  
 Mus. xxii, p. 700.
- Lasca bermudensis* is a synonym of *L. rubra*; DALL, Tr. Wagner Inst. iii,  
 p. 1164.
- †*Laubriereia*, n. gen., type *Erycina emarginata*, Desh.; COSSMANN (580),  
 p. 72.
- Leguminaia locardi*, n. n. for *Pseudodon chantrei*, Locard, preocc.; SIMPSON,  
 P. U. S. Mus. xxii, p. 653.
- Lens*, n. sect. of *Physunio* (q.v.), type *Unio eximius*, Lea; SIMPSON, t. c.  
 p. 831.
- Leptonaias*, n. sect. of *Unio* for *U. ravisellus*, Morel.; CROSSE & FISCHER,  
 Miss. Sci. Mexique ii, p. 557 [1894].
- Lucina lux*, Bermudas; VERRILL & BUSH, Tr. Connect. Ac. x, p. 518, fig.:  
 n. sp.
- †*Ludovicica* (Desh. MS.), n. gen. for *L. squamula*, n. sp., Eocene; COSSMANN  
 (581), p. 45.
- Medionidus*, n. gen. for *Unio walkeri*; SIMPSON, P. Ac. Philad. 1900, p. 77:  
 Also in P. U. S. Mus. xxii, p. 588 [with type *U. conradicus*, Lea].
- Mesonaias*, n. sect. of *Unio* for *U. explicatus*, Morel.; CROSSE & FISCHER,  
 Miss. Sci. Mexique ii, p. 556 [1894].
- Micronaias*, n. sect. of *Unio*, type *U. aratus*, Lea; SIMPSON, P. U. S. Mus.  
 xxii, p. 743.
- Mylitta inæqualis*, Dall, is a synonym of *M. gemmata*, Tate; HEDLEY,  
 P. Linn. Soc. N. S. Wales xxv, p. 497.
- Nasus*, n. sect. of *Pseudodon*, type *P. nankingensis*, Heude; SIMPSON,  
 P. U. S. Mus. xxii, p. 839.
- Neolepton*, n. gen. for *Lepton sulcatulum*, Jeff., etc.; MONTEROSATO (584),  
 p. 15.
- Nephronaias*, n. sect. of *Unio* for *U. plicatulus*, Charp.; CROSSE & FISCHER,  
 Miss. Sci. Mexique ii, p. 556 [1894].
- Nephronaias reticulatus*, Honduras; SIMPSON, P. Ac. Philad. 1900, p. 77,  
 fig.: n. sp.
- Nodularia lima*, n. n. for *Unio radula*, Bens. nec Say, p. 820, *jickeli*, n. n.  
 for *Unio teretiusculus*, Jickeli nec Phil., p. 826; SIMPSON, P. U. S.  
 Mus. xxii.
- Nodularia cylindracea*, China; SIMPSON, P. Ac. Philad. 1900, p. 84, fig.:  
 n. sp.
- Obovalis*, n. sect. of *Pseudodon*, type *P. loomisi*, Simpson; SIMPSON,  
 P. U. S. Mus. xxii, p. 840.
- Oorbitella*, n. sect. of *Montacuta*, type *M. floridana*, Dall; DALL, Tr.  
 Wagner Inst. iii, pp. 1119, 1170.
- Pachyanodon*, n. subgen. of *Anodonta* for *A. luteola*, Lea, etc.; MARTENS,  
 Biol. Centr.-Amer. pp. 525, 537.
- Pachynaias*, n. sect. of *Unio* for *U. spheniopsis*, Morel.; CROSSE & FISCHER,  
 Miss. Sci. Mexique ii, p. 556 [1894].
- †*Parisiella*, n. gen. for *P. ambigua*, Eocene; COSSMANN (581), p. 103.

- Pegias*, n. gen., type *Margaritana fabula*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 660.
- Phyllonaxias*, n. sect. of *Unio* for *U. paludosus*, Morel.; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 555 [1894].
- Physunio*, n. gen., type *Unio gravidus*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 830.
- Pilea*, n. subgen. of *Truncilla*, type *Unio personatus*, Say; SIMPSON, t. c. p. 522.
- Pilebryoconcha*, n. gen. for *Anodonta exilis*, Lea; SIMPSON, t. c. p. 587.
- Pisidium clessini*, Switzerland; SURBECK, Mt. Ges. Luzern iii, p. 482, fig.: *P. boliviense*, Bolivia; STURANY, Nachrbl. Deutsch. malak. Ges. 1900, p. 57, fig.: *P. imbecille*, Michigan, *peraltum*, Michigan, Illinois, Iowa, and Kentucky, p. 5; STERKI, Nautilus xiv : n. spp.
- Plagiodon*, Lea, renamed *Iheringella*, q.v.
- †*Planikellia*, n. sect. of *Kellia*, type *K. radiolata*, Lamk.; COSSMANN (581), p. 69.
- Plethobasus*, n. sect. of *Pleurobema*, type *Unio æsopus*, Green; SIMPSON, P. U. S. Mus. xxii, p. 764.
- Pletholophus*, n. subgen. of *Cristaria*, type *Symphynota discoidea*, Lea; SIMPSON, t. c. p. 585.
- Pleurobema avellana*, p. 81, *patsaligensis*, p. 82, Alabama; SIMPSON, P. Ac. Philad. 1900, figg. : n. spp.
- Pressodonta*, n. subgen. of *Alasmidonta*, type *Unio calceolus*, Lea; SIMPSON, P. U. S. Mus. xxii, p. 667.
- Pseudavicula*, n. gen., type *Unio johnstoni*, Smith; SIMPSON, t. c. p. 860.
- Pseudobaphia*, n. subgen. of *Parreysia*, type *Unio biesianus*, Heude; SIMPSON, t. c. p. 849.
- Pseudodon loomisi*, Japan; SIMPSON, P. Ac. Philad. 1900, p. 84, fig. : n. sp.
- Pseudomutela*, n. subgen. of *Mutela*, type *Mycetopus plicatus*, Sby.; SIMPSON, P. U. S. Mus. xxii, p. 905.
- Pseudon*, n. subgen. of *Obovaria*, type *Unio ellipsis*, Lea; SIMPSON, t. c. p. 601.
- Pseudospatha*, n. gen. for *Spatha tanganyicensis*, Smith; SIMPSON, t. c. p. 577.
- Psoronaia*, n. sect. of *Unio* for *U. psoricus*, Morel.; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 556 [1894].
- Ptychobranthus*, n. gen. for *Unio phaseolus*, Hildreth; SIMPSON, P. Ac. Philad. 1900, p. 79: Also in P. U. S. Mus. xxii, p. 612.
- Ptychobranthus clintonensis*, Arkansas; SIMPSON, P. Ac. Philad. 1900, p. 79, fig. : n. sp.
- Ptychoderma*, n. subgen. of *Plagiola*, type *Unio cyrenoides*, Phil.; SIMPSON, P. U. S. Mus. xxii, p. 606.
- Ptychorhynchus*, n. gen., type *Unio pfisteri*, Heude; SIMPSON, t. c. p. 850.
- Ptychorhynchus incertus*, n. n. for *Unio compressus*, Heude, preocc.; SIMPSON, t. c. p. 851.
- Quadrula kouangensis*, n. n. for *Unio moreletianus*, Heude, preocc., *similaris*, n. n. for *U. affinis*, Heude nec Lea, p. 799, *ovata*, n. n. for *U. ventitus*, Heude, pars, p. 801; SIMPSON, t. c.
- Quadrula guatemalensis*, Guatemala, *flexuosa*, Tennessee; SIMPSON, P. Ac. Philad. 1900, p. 83, figg. : n. spp.
- Radiatula*, apparently n. sect. of *Nodularia*, type *Unio crispiculatus*, Bens.; SIMPSON, P. U. S. Mus. xxii, p. 820.
- Rectidens*, n. gen., type *Unio prolongatus*, Drouet; SIMPSON, t. c. p. 853.
- Rugifera*, n. subgen. of *Alasmidonta*, type *Alasmidonta marginata*, Say; SIMPSON, t. c. p. 670.
- Scolianodon*, n. subgen. of *Anodonta*, for *A. inaequalis*, Lea  
MARTENS, Biol. Centr.-Amer. pp. 525, 524.



- Shistodeasmus*, n. gen., type *Unio lampreyanus*, Baird & Adams; SIMPSON, P. U. S. Mus. xxii, p. 803: *S. spinosus*, n. n. for *Unio vestitus*, Heude, pars; SIMPSON, t. c. p. 804.
- Simonaias*, n. sect. of *Unio* for *U. tabascoensis*, Charp.; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 557 [1894].
- Spatha lacustris*, n. n. for *anceyi*, Brgt., 1894 nec 1885; SIMPSON, P. U. S. Mus. xxii, p. 898.
- Spathopsis*, n. subgen. of *Lamellidens* (q.v.), type *Anodonta guillaini*, Recluz; SIMPSON, t. c. p. 857.
- Sphaerium luridum*, N.W. Mexico, *costaricanum*, p. 552, Central Costa Rica; MARTENS, Biol. Centr.-Amer. figg. : n. spp.
- Sphenonaias*, n. sect. of *Unio* for *U. liebmanni*, Phil.; CROSSE & FISCHER, Miss. Sci. Mexique ii, p. 557 [1894].
- Spixconcha*, n. n. for *Aplodon*, Spix nec Rafinesque; PILSBRY, Nautilus vii, p. 30 [1893].
- †*Stutchburia*, n. gen. for *Orthonota costata*, Morris; ETHERIDGE, Rec. Austral. Mus. iii, p. 178.
- Styganodon*, n. subgen. of *Anodonta*, type *A. tenebricosa*, Lea; MARTENS, Biol. Centr.-Amer. p. 525.
- Suborbiculus*, n. sect. of *Pseudodon*, type *Monocondylus orbicularis*, Morel; SIMPSON, P. U. S. Mus. xxii, p. 835.
- Trapezoides*, n. gen., type *Unio foliacea*, Gould; SIMPSON, t. c. p. 858: *T. peninsularis*, n. n. for *Unio sumatrensis*, Sby. nec Lea; SIMPSON, t. c. p. 859.
- Triquetrana*, n. subgen. of *Hyria*, type *Unio stercensis*, Lea; SIMPSON, t. c. p. 869.
- Unionidae*, parasites of; KELLY (256): Notes on South American species; IHERING, Science xii, p. 857: Synonymy of the *parvus* group; CALL (576): *U. stollii*, n. n. for *U. nicklinianus*, Küster nec Lea; MARTENS, Biol. Centr.-Amer. p. 492: *U. pseudonymus*, n. n. for *Unio hueti*, Kob. nec Brgt.; SIMPSON, P. U. S. Mus. xxii, p. 694.
- Unio tschiliensis*, Tschili-Li; STURANY, Denk. Ak. Wien. lxx, p. 41, fig.: *U. proclinator*, Cuba, *championi*, p. 508, *radiatus*, p. 518, *guatemalanus*, p. 519, W. Guatemala, *rubicundus*, p. 514, N. Guatemala; MARTENS, Biol. Centr.-Amer. figg.: *U. pressirostris*, p. 14, *stolatus*, *laticeps*, p. 15, Sumatra; MARTENS, Nachrbl. Deutsch. malak. Ges. 1900: *U. fruhstorferi*, Annam; DAUTZENBERG, J. Conchyl. xlviii, p. 429: *U. rugosus*, p. 93, *gibberulus*, p. 99, *lepidulus*, p. 104, Basin of Seine; DROUET, Mem. Ac. Dijon vii, figg.: *U. (Pleurobema) hagleri*, Alabama; FRIERSON, Nautilus xiii, p. 109, fig.: *U. kingii*, Georgia; WRIGHT, t. c. p. 138: *U. (Lampsilis) rovirosai*, Mexico; PILSBRY, t. c. p. 140: *U. schroederi*, Germany; SCHRÖDER (585), p. 224: *U. le-doulxianus*, Bagaimoyo; CHARMES, Bull. Soc. malac. France ii, p. 173 [1885]: *U. sandriopsis*, p. 325, *ostiorum*, *turicus*, p. 327, *tiguricus*, p. 329, *duregicus*, p. 331, *subrobustus*, p. 332, Lake of Zurich; SERVAIN, t. c. [1885]: n. spp.
- Vesicomya*, note on genus; SMITH, P. Malac. Soc. London iv, p. 81.
- Virgula*, n. sect. of *Glabaris*, type *Glabaris ensiformis*, Spix; SIMPSON, P. U. S. Mus. xxii, p. 931.
- Virgus*, n. gen., type *Unio beccarianus*, T. Canefri; SIMPSON, t. c. p. 851.

### PSEUDOLAMELLIBRANCHIATA.

- †*Anomalomya*, n. gen., for *A. corrugata*, n. sp., Eocene; COSSMANN (581), p. 169.
- †*Aviculoperna*, n. sect. of *Avicula*, type *Perna aviculina*, Desh.; COSSMANN (581), p. 164.

- †*Aviculovulva*, n. gen., type *Avicula macrotis*, Desh.; COSSMANN (581), p. 166.
- Chlamys bednalli*, note on, with figures; HEDLEY, P. Linn. Soc. N. S. Wales xxv, p. 495.
- Chlamys (Equipekten) bavayi*, Cumana, Santa-Marta, Bahia Honda; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 226, fig.: n. sp.
- †*Myndioptera*, Sal., on the genus; BITTNER, Jahrb. geol. Reichsanst. l, pp. 59-66, pl. vi.
- Ostrea (Alectryonia) darwini*, (A.) *reevei*, new names respectively for figg. 36a & 36b of Reeve's Conch. Icon. pl. xvii, as *O. imbricata*; MAYER-EYMAR, J. Conchyl. xlvii, p. 444 [1899].
- †*Pachyperna*, n. subg. of *Perna* for *P. laverdana*, n. sp., from the Venetian older tertiary; OPPENHEIM, Zeitschr. Deutsch. geol. Ges. lii, p. 237, fig.
- Palliolum*, n. sect. of *Pecten* for *P. incomparabilis*, Risso, etc.; MONTEROSATO (584), p. 5.
- Pectinida*, on the family with *Eupecten*, n. n. for *Pecten*, s. str.; PHILIPPI, Zeitschr. Deutsch. geol. Ges. lii, pp. 64-117: *P. irradians*, variation; DAVENPORT, Amer. Natural. xxxiv, p. 863.
- Pecten chazaliei*, Testigos Is., Tortuga I., Santa-Marta; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 228, fig.: n. sp.
- †*Pleuronectiles*, on the genus; SALOMON, Zeitschr. Deutsch. geol. Ges. lii, pp. 348-359.
- †*Pseudomonotis*, on the genus; SALOMON, t. c. pp. 348-359.

## FILIBRANCHIATA.

- Eumodiolus*, n. subgen. of *Modiolus* for *M. modiolus*, L.; IHERING, P. Malac. Soc. London iv, p. 87.
- Eumytilus*, n. subgen. of *Mytilus* for *M. edulis*; IHERING, t. c. p. 86.
- Idas* is a synonym of *Myrina*; MARSHALL, J. Malac. vii, p. 169.
- Modiella*, n. gen. for *Modiola politus*, Verrill & Smith; MONTEROSATO (584), p. 12.
- Myrina simpsoni*, Aberdeen; MARSHALL, J. Malac. vii, p. 167, fig.: n. sp.
- Mytilidae* of South America; IHERING, P. Malac. Soc. London iv, pp. 84-98.
- †*Planimodiola*, n. sect. of *Modiola*, type *M. sulcata*, Lam.; COSSMANN (581), p. 155.
- Rhomboidella*, n. gen. for *Modiola rhombea*, Berkl.; MONTEROSATO (584), p. 13.
- †*Semimodiola*, n. sect. of *Modiola*, type *M. hastata*, Desh.; COSSMANN (581), p. 154.
- Trichomya*, n. subgen. of *Mytilus* for *M. hirsutus*, Lamk.; IHERING, P. Malac. Soc. London iv, p. 87.

## PROTOBRANCHIATA.

- Glonus*, Jeffreys nec Gistel, renamed *Pristigloma*, q. v.
- Leda taphria*, n. n. for *L. celata*, Hinds nec Conrad; DALL (583).
- Leda chazaliei*, Santa-Marta; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 241, fig.: n. sp.
- Nucula*, locomotion; DREW (157).
- Nucula dalmasi*, Testigos Is., Gulf of Maracaibo, Santa-Marta ·<sup>1</sup> BERG, Mem. Soc. zool. France xiii, p. 240. fig. · ·

*Pristigloma*, n. n. for *Glomus*, Jeffreys nec Gistel; DALL, *Nautilus* xiv, p. 44.

*Solenomya*, locomotion in; DREW, *Science* xi, p. 171: Also (157).

*Yoldia*, locomotion; DREW (157): *Y. limatula*; DREW (156).

## V. AMPHINEURA.

### APLACOPHORA.

[None.]

### POLYPLACOPHORA.

*Acanthochites porosus*, parasite of; BRUCKER & TROUESSART, C.R. Soc. Biol. vii, p. 107: *A. discrepans*, radula; TEMPÈRE (523).

*Callochiton rufus*, S. Australia; ASHBY, Tr. R. Soc. S. Austral. xxiv, p. 87, fig.: n. sp.

*Chiton oruktus*, South Australia; MAUGHAN, t. c. p. 89, fig.: n. sp.

*Cryptoplax*, a South African species; SYKES, J. Malac. vii, p. 164.

*Ichnochiton*, three-valved specimen; SYKES, t. c. p. 164, fig.: Six-valved specimen; DALL, *Science* xii, p. 823.

*Ichnochiton (Stenochiton) pallens*, S. Australia; ASHBY, Tr. R. Soc. S. Austral. xxiv, p. 86, fig.: n. sp.

† *Trachypleura*, n. g. of *Chitonida*, for *T. triado-marchica*, n. sp., from the Muschelkalk of Rüdersdorf; JAEKEL, Zeitschr. Deutsch. geol. Ges. lii, Protok. pp. 9-14, figg.

## VIII. BRACHIOPODA.

BY

E. R. SYKES, B.A., F.L.S.,

ASSISTED BY

E. A. SMITH, F.Z.S., AND G. C. CRICK, F.G.S.

---

### CONTENTS.

	Page
I. TITLES . . . . .	1
II. BIOLOGY.	
Anatomy . . . . .	4
Distribution.	
Geographical . . . . .	4
Geological . . . . .	4
III. SYSTEMATIC . . . . .	6

---

### I. TITLES.

1. ATHANASIU, S. Ueber eine Eocänfauna aus der nordmoldauischen Flyschzone. Verh. geol. Reichsanst. 1899, pp. 256-267, figg. Brachiopoda, pp. 259-262.
2. BAUMBERGER, E., & MOULIN, H. La série Néocomienne à Valangin. Bull. Soc. Neuchatel xxvi, pp. 150-210.
3. BETTONI, A. Fossili domeriani della provincia di Brescia. Pp. 1-88, 9 pls. [Abh. Schweiz. pal. Ges. xxvii].
4. BITTNER, A. Versteinerungen aus der Trias-Ablagerungen des Süd-Ussuri-Gebietes in der Ostsibirischen Küstenprovinz. Trudui geol. Kom. vii, No. 4, 1899, pp. 35, 4 pls. (In Russian with German translation.)

5. [BITTNER, A.] Zur Verbreitung der Brachiopoden aus der Familie der Koninckiniden in den Triasablagerungen Ungarns. Verh. geol. Reichsanst. 1900, pp. 183-185.
6. —. Trias Brachiopoda and Lamellibranchiata. Translated by Dr A. H. Foord and Mrs A. H. Foord. Pal. Ind. ser. 15, iii, pt. 2, 1899, pp. 76, 12 pls.
7. BLOCHMANN, F. Untersuchungen über den Bau der Brachiopoden. Theil II, pp. 69-124, 12 pls. and 14 figg. in text.
8. BÖSE, E. & SCHLOSSER, M. Über die Mittelliasische Brachiopoden-fauna von Südtirol. Paläontogr. xlii, pp. 175-212, pls. xvii & xviii.
9. BUCKMAN, S. S. List of types and figured specimens of Brachiopoda [in coll. Buckman]. P. Cotteswold Club xiii, pp. 133-141.
10. CLELAND, H. F. The Calciferous of the Mohawk Valley. Bull. Amer. Pal. No. 13, pp. 26, pls. xv & xvi. Brachiopoda, pp. 17-19.
11. COSSMANN, M. Seconde note sur les mollusques du Bathonien de Saint-Gaultier (Indre). Bull. Soc. geol. France xxviii, pp. 165-203. Brachiopoda by H. DOUVILLÉ, pp. 202 & 203.
12. DALL, W. H. Some names which must be discarded. Nautilus xiv, pp. 44 & 45.
13. DIBLEY, G. E. Zonal features of the Chalk pits in the Rochester, Gravesend, and Croydon areas. P. Geol. Ass. xvi, pp. 484-499.
- DOUVILLÉ, H. [See COSSMANN (11).]
14. DYBOWSKI, W. Beschreibung der *Terebratula grewingkii* sp. n., aus der Kreideformation Lithauens. Nachrbl. Deutsch. malak. Ges. 1900, pp. 139-142, pl. ii pars.
15. ENDERLE, J. Über eine anthracolithische Fauna von Balia Maaden in Kleinasien. Beitr. Pal. Oesterr.-Ung. xiii, pp. 49-109, pls. iv-viii. Brachiopoda, pp. 58-92.
16. FORIR, H. *Rhynchonella omaliusi* et *Rhynchonella dumonti* ont elles une signification stratigraphique? Ann. Soc. geol. Belgique xxvii, pp. 33-47.
17. GIRTY, G. H. Devonian and Carboniferous Fossils [from the Yellowstone National Park]. Mon. U. S. Geol. Surv. xxxii, pt. 2, pp. 479-578, pls. lxvi-lxxvi. Brachiopoda, pp. 502-505, 520-571.
18. GORDON, M. M. O. On the fauna of the Upper Cassian zone in Falzarego Valley, South Tyrol. Geol. Mag. 1900, pp. 337-349. List of Brachiopoda, p. 339.
19. GRABAU, A. W. Siluro-Devonic contact in Erie County, New York. Bull. Geol. Soc. Amer. xi, pp. 347-376, pls. xxi & xxii. Brachiopoda, pp. 365-370.
20. GREPPIN, E. Description des fossiles du bajocien supérieur des environs de Bâle. 3<sup>me</sup> Partie. Pp. 127-210, 7 pls. [Abh. Schweiz. pal. Ges. xxvii.] Brachiopoda, pp. 155-180.
21. HERRICK, C. L. The Geology of the White Sands of Mexico. J. Geol. viii, pp. 112-125, pls. i-iii.
22. KAYSER, E. Alguns fosseis paleozoicos do Estado do Paraná. Rev. Mus. Paulista iv, pp. 301-311, pls. i & ii.
23. KITCHIN, F. L. Zur Kenntniss der jurassischen Brachiopodenfauna von Kutch. Inaugural-Dissertation.....Munich, 1897, pp. 56.

24. [KITCHIN, F. L.] Jurassic Fauna of Cutch. The Brachiopoda. Pal. Ind. ser. 9, iii, pt. 1, pp. 87, pls. xv.
25. —. *Terebratulina rowei*, n. sp. See ROWE (37) pp. 355–357, figg.
26. KOKEN, E. Ueber triassische Versteinerungen aus China. N. Jahrb. Min. 1900, i, pp. 186–215, pls. ix & x, figg. Brachiopoda, pp. 205–212.
27. LAHILLE, F. Notes sur *Terebratella patagonica* (Sow.). Revist. Mus. La Plata ix [1899], pp. 393–398, pls. i & ii.
28. LODDER, M. List of the Tasmanian shells in the Tasmanian Museum collection, with the names of many species that are not yet represented therein. P. Soc. Tasmania 1898–1899, pp. 129–147.
29. LORIOL, P. DE. Étude sur les mollusques et brachiopodes de l'oxfordien inférieur ou zone à *Ammonites renggeri* du Jura lédonien. Accompagnée d'une notice stratigraphique par M. Abel Girardot, pp. 196, 6 pls. [Abh. Schweiz. pal. Ges. xxvii.] Brachiopoda, pp. 133–135.
30. LOTZ, H. Die Fauna des Massenkalks der Lindener Mark bei Giessen. Schr. Ges. Marburg xiii, pp. 197–236, 4 pls.
31. MATTHEW, G. F. The Etcheminian Fauna of Smith Sound, Newfoundland. Tr. R. Soc. Canada v, sect. iv, pp. 97–123, pls. v–vii.
32. —. Preliminary notice of the Etcheminian fauna of Newfoundland. Bull. Soc. N. Brunswick iv, pp. 189–197, pls. i–iii.
33. —. Preliminary notice of the Etcheminian fauna of Cape Breton. T. c. pp. 198–208, pls. i–iv.
- MOULIN, H. [See BAUMBERGER & MOULIN (2).]
34. MÜLLER, G. Versteinerungen des Jura und der Kreide. In W. Bornhardt, 'Zur Oberflächengestaltung und Geologie Deutsch-Afrikas' (Deutsch-Ost-Afrika vii, 1900), pp. 514–571, pls. xiv–xxv.
- NANSEN, F. [See POMPECKJ (36).]
35. PALLARY, P. Coquilles marines du littoral du Département d'Oran. J. Conchyl. xlviii, pp. 211–422, pls. vi–viii, figg. Brachiopoda at p. 420.
- PETTERD, W. F. [See TWELVETREES & PETTERD (43).]
36. POMPECKJ, J. F. The Jurassic Fauna of Cape Flora, Franz Josef Land, with a geological sketch of Cape Flora and its neighbourhood by Fridtjof Nansen. Norweg. North Polar Exped. i, 147 pp., 3 pls.
37. ROWE, A. W. The zones of the White Chalk of the English coast. i. Kent and Sussex. With appendices by Prof. J. W. Gregory, D.Sc., and Dr F. L. Kitchin, M.A., F.G.S. The cliff sections by C. Davies Sherborn. P. Geol. Ass. xvi, pp. 289–368, pls. viii–x.
38. ROWLEY, R. R. Descriptions of new species of Fossils from the Devonian and Subcarboniferous rocks of Missouri. Amer. Geol. xxv, pp. 261–273, pl. v.
39. SCHELLWIEN, E. Die Fauna der Troglkofelschichten in den Karnischen Alpen und den Karawanken. i Theil: Die Brachiopoden. Abh. geol. Reichsanst. xvi, Hft. 1, pp. 122, 15 pls.
40. —. Beiträge zur Systematik der Strophomeniden des oberen Palaeozoicum. N. Jahrb. Min. 1900, i, pp. 1–15, 1 pl.
- SCHLOSSER, M. [See BÖSE & SCHLOSSER (8).]

41. SCHUCHERT, C. On the lower Silurian (Trenton) Fauna of Baffin Land. P. U. S. Mus. xxii, pp. 143-177, pls. xii-xiv.
42. TORNQUIST, A. Neue Beiträge zur Geologie und Paläontologie der Umgebung von Recoaro und Schio (im Vicentin). iv. Der Sturial-Kalk (*Trinodosus*-Niveau). Zeitschr. Deutsch. geol. Ges. lii, pp. 118-153, pls. ii-iv. Brachiopoda, pp. 131 & 132.
43. TWELVETREES, W. H. & PETTERD, W. F. On the genus *Kraussina* in Tasmania. P. Soc. Tasmania 1898-1899, pp. 88-91, 1 pl.
44. UPTON, C. Some Cotteswold Brachiopoda. P. Cotteswold Club xiii, pp. 121-132, pl. iii.
45. WALCOTT, C. D. Cambrian Fossils [from the Yellowstone National Park]. Mon. U. S. Geol. Surv. xxxii, pt. 2, pp. 440-466, pls. lx-lxv. Brachiopoda, pp. 443-453.
46. WELLER, S. A bibliographic index of North American Carboniferous Invertebrates. Bull. U. S. Geol. Surv. no. 153, 1898, pp. 653.
47. —. The succession of fossil faunas in the Kinderhook beds at Burlington, Iowa. Rep. Geol. Surv. Iowa x, pp. 61-79.
48. WYSOGÓRSKI, J. Zur Entwicklungsgeschichte der Orthiden im ostbaltischen Silur. Zeitschr. Deutsch. geol. Ges. lii, pp. 220-236, pl. viii.

## II. BIOLOGY.

### A. ANATOMY.

Anatomy of *Discinisca lamellosa* and *Lingula anatina*; BLOCHMANN (7).

### B. DISTRIBUTION.

#### GEOGRAPHICAL.

FRANZ JOSEF LAND and Kolguev:—*Rhynchonella psittacea*; MELVILL & STANDEN, Mem. Manchester Soc. xlv, no. 4, pp. 2, 12.

Valencia Harbour:—Occurrence of *Terebratulina caput-serpentis*; BEAUMONT, P. Irish Ac. v, p. 764.

Oran:—Brachiopods from; PALLARY (35).

Testigos Is.:—Species of Brachiopods; DAUTZENBERG, Mem. Soc. zool. France xiii, p. 265.

Tasmania:—Species in Tasmanian Museum; LODDER (27): On the genus *Kraussina*; TWELVETREES & PETTERD (43).

#### GEOLOGICAL.

General:—Fauna from near Giessen with n. spp.; LOTZ (29).—Notes on some fossils from China; DOUVILLÉ, C.R. Ac. Sci. cxxx, pp. 592-595.

Miocene:—Brachiopoda from the Appennines; NELLI, Boll. Soc. geol. Ital. xix, pp. 414 & 415.—Fauna of Patagonian Formation: ORTMANN, Amer. J. Sci. x, p. 368.

Eocene:—Brachiopoda from North Moldavia, with *Terebratulina oblonga*, n. sp.; ATHANASIU (1).

Cretaceous:—List of Chalk Brachiopoda from the Rochester, Gravesend, and Croydon areas; DIBLEY (13), pp. 492–495.—Brachiopoda from the White Chalk; ROWE (37), pp. 363 & 364.—*Terebratulina rowei*, n. sp., from the Upper Chalk; KITCHIN in ROWE (37), pp. 355–357, figg.—Fossils from Valangin; BAUMBERGER & MOULIN (2).—*Terebratula grewingkii*, n. sp., from Lithuania; DYBOWSKI (14).—Brachiopoda from the Lower Cretaceous of Matmatas (Algeria); FICHEUR, Bull. Soc. geol. France xxviii, pp. 559–589.—Fossils from German East Africa, with some n. spp.; MÜLLER (34).

Jurassic:—Brachiopoda from the province of Brescia; BETTONI (3), pp. 12–14.—Fauna of Cape Flora, Franz Josef Land; POMPECKI (36).—Brachiopoda from Cutch with many n. spp.; KITCHIN (23).—Fossils from Cutch, with *Rhynchonella reticardinalis*, n. sp.; KITCHIN (24).—Brachiopoda from German East Africa, with *Rhynchonella subnobilis*, n. sp.; MÜLLER (34).

Oolite:—New species from Cotteswolds; UPTON (44).—Brachiopoda from the *sowerbyi*-zone, Basle; STRUBIN, Eclog. geol. Helvet. vi, p. 337.—Brachiopoda from the Upper Bajocian of Basle; GREPPIN (20).—Bathonian forms from Saint-Gaultier (Indre); DOUVILLÉ (11).—Oxfordian Brachiopoda from the Jura lédonien; LORIOL (29).

Lias:—Fauna of the Middle Lias of the South Tyrol, with n. spp. of *Rhynchonella*, *Spiriferina*, *Terebratula* and *Waldheimia*; BÖSE & SCHLOSSER (8).—New species from Cotteswolds; UPTON (44).

Trias:—List of Upper Cassian Brachiopoda from S. Tyrol; OGILVIE-GORDON, Verh. geol. Reichsanst. 1900, p. 309.—List of Brachiopoda from the Upper Cassian Zone in Falzarego Valley, South Tyrol; GORDON (18), p. 339.—List of fossils from the Pachycardientuffe of the Seiser Alp in Tyrol; BROILI, Centrbl. Min. 1900, p. 369.—Brachiopoda from the Sturial-Kalk in Vicentin; TORNQUIST (42).—*Koninckinida* of Hungary; BITTNER (5).—Brachiopoda from East Siberia, with n. spp. of *Lingula* and *Terebratula*; BITTNER (4).—Brachiopoda from the Himalayas with many n. spp.; BITTNER (6).—*Retzia fuchsii* and *Rhynchonella sinensis*, n. spp., from the Trias of China; KOKEN (26).

Palæozoic:—Brachiopoda from Poland, with n. spp.; GÜRICH, N. Jahrb. Min. B. B. xiii, pp. 358 & 359.—N. spp. of *Spirifer* from Parana; KAYSER (22).—Upper Palæozoic *Strophomenida* with *Geyerella*, n. g.; SCHELLWIEN (40).

Permian:—Figures of Brachiopoda from New Mexico; HERRICK (21).

Permo-Carboniferous:—The fauna of the 'Troglkofelschichten' in the Carnic Alps, with several n. spp. and n. vars.; SCHELLWIEN (39).—Anthracolithic Brachiopoda from Balia Maaden in Asia Minor, with several n. spp.; ENDERLE (15).

Carboniferous:—Fauna of the Millstone Grit and Coal Measures in S. Wales; STRAHAN & GIBSON, Mem. Geol. Surv. U.K. 232, pp. 47 & 48, 86.—Brachiopoda from Northumberland; SHARMAN & NEWTON in GUNN, Geol. Belford, etc. (Mem. Geol. Surv. U.K.), pp. 121–132.—Catalogue of fossils from North America; WELLER (46).—Lower Carboniferous forms, with n. spp. from the Yellowstone National Park; GIRTY (17), pp. 550–571.—Names of species in the Kinderhook beds at Burlington, Iowa; WELLER (47).—List of Brachiopoda from New Mexico; HERRICK & BENDRAT, Amer. Geol. xv, pp. 240–242.

Devonian:—*Rhynchonella omaliusi* and *R. dumonti*; FORBÉ (16).—List of fossils from l'Ille-et-Vilaine; LEBESCONTE, Bull. Soc. geol. France xxviii, p. 90.—Famennian Brachiopoda from Belgium; DREYER, Ann. Soc. geol. Belgique xxvii, pp. clvi–clxi.—Lists of fossils from the *Lo* and Oriskany Formations; SCHUCHERT, Bull. C 332.—Brachiopoda from the Yellowstone



pp. 502-505.—Brachiopoda from Wisconsin; MONROE, J. Geol. viii, p. 314.  
—N. spp. from the Devonian and Sub-carboniferous of Missouri; ROWLEY (38).—Fossils from Colorado; SPENCER, Amer. J. Sci. ix, p. 125.

Silurian:—List of Brachiopoda from Rhayader; LAPWORTH, Quart. J. Geol. Soc. lvi, table i (facing p. 126).—List of Upper Silurian fossils from S. Wales; STRAHAN, Mem. Geol. Surv. U. K. 249, 1899, pp. 11 & 12.—Fauna of Baffin Land; SCHUCHERT (41).—On the *Orthidæ* from the East Baltic Provinces; WYSOGÓRSKI (48).—Lower Silurian Brachiopoda from Middle Bohemia; ŽELIZKO, Verh. geol. Reichsanst. 1900, pp. 88 & 89.—N. spp. from the Calciferous of the Mohawk Valley; CLELAND (10).—Brachiopoda from the Manlius limestone in Erie County, New York, with a n. sp. of *Spirifer*; GRABAU (19), pp. 365-370.

Cambrian:—List of Brachiopoda from the Stockingford Shales; FOX-STRANGWAYS, Geol. Country between Atherstone and Charnwood Forest (Mem. Geol. Surv. U. K.), p. 14.—Brachiopoda from the Yellowstone National Park; WALCOTT (45).—Note on *Obolella atlantica*, Newfoundland; MATTHEW, Tr. R. Soc. Canada v, sect. iv, p. 70.—Etcheminian fauna of Newfoundland, with n. sp.; MATTHEW (32).—Etcheminian fauna of Cape Breton; MATTHEW (33).—Etcheminian Fauna of Smith Sound, Newfoundland, with n. sp.; MATTHEW (31).

### III. SYSTEMATIC.

Types and figured specimens in coll. Buckman; BUCKMAN (9).

On the Silurian *Orthidæ* from the East Baltic Provinces; WYSOGÓRSKI, Zeitschr. Deutsch. geol. Ges. lii, pp. 220-236, pl. viii.

*Argyrotheca*, n. n. for *Cistella*, Gray nec Gistel; DALL, Nautilus xiv, p. 44.

*Cistella*, Gray nec Gistel, renamed *Argyrotheca*, q.v.

*Disciniscia lamellosa*, anatomy; BLOCHMANN (7).

†*Geyerella*, n. g., type *G. gemmellaroi*, Schellw.; SCHELLWIEN, N. Jahrb. Min. 1900, i, p. 12.

*Lingula anatina*, anatomy; BLOCHMANN (7).

†*Neoproductus*, ? n. gen.; NIKITIN, Bull. Com. geol. St. Petersb. xviii, p. 385.

†*Neospirifer*, ? n. gen.; NIKITIN, t. c. p. 385.

†*Palæobolus*, n. subgen. of *Obolus*, type *O. bretonensis*; MATTHEW, Bull. Soc. N. Brunswick iv, p. 201.

†*Pseudokingena*, n. g. for *Kingena* (*Terebratulina*) *deslongchampsii*, Davidson, and *Kingena capellinii*, Stefano, from the Middle Lias; BÖSE & SCHLOSSER, Palæontogr. xlv, p. 177.

*Terebratella patagonica*, note on, with figures; LAHILLE, Revist. Mus. La Plata ix, p. 393.

# IX. BRYOZOA.

BY

ARTHUR WILLEY, D.Sc.

## CONTENTS.

	Page
I. TITLES . . . . .	1
II. SUBJECT INDEX . . . . .	3
(a) General Biology . . . . .	3
(b) Geographical . . . . .	4
III. SYSTEMATIC . . . . .	5

## I. TITLES.\*

1. ALLEN, E. J. & TODD, R. A. The Fauna of the Salcombe Estuary. J. Mar. Biol. Ass. N.S. vi, *Polyzoa*, pp. 204, 205.  
BASSLER, R. S. [See NICKLES & BASSLER.]
2. BIDENKAP, O. Die Bryozoen. 1. Teil. Die Bryozoen von Spitzbergen und König-Karla-Land.  
Fauna Arctica (Römer u. Schaudinn), Bd. i, Lief. 3. Jena, 1900, pp. 505-540, Taf. ix & x.
3. CALVET, L. Contributions à l'histoire naturelle des Bryozoaires ectoproctes marins.  
Part I. Étude monographique de la *Bugula sabatieri*, L. Calvet, 1900, pp. 19-147.  
Part II. Étude comparée des Bryozoaires Ectoproctes marins, pp. 149-434.  
Thèses présentées à la Fac. des Sci. de Paris. Montpellier, 1900, 488 pp., 13 pls., 43 text-figg. Index.

---

\* An asterisk prefixed to a quotation indicates that the Recorder's Journal or Work referred to.

## 2 Bry.

## IX. BRYOZOA.

4. DAVENPORT, C. B. On the Variation of the Statoblasts of *Pectinatella magnifica* from Lake Michigan at Chicago. Amer. Natural. xxxiv, pp. 959-968, 9 figg.
5. DENDY, A. *Cryptopolyzoon*, an Emendation in Nomenclature. Zool. Anz. xxiii, pp. 391 & 392.
6. GILSON, G. Exploration de la Mer sur les côtes de la Belgique en 1899. Mem. Mus. Hist. nat. Belgique 1900, pp. 1-81, 3 pls. and 10 figg. List of *Bryozoa*, p. 34.
7. HARMER, S. F. A Revision of the Genus *Steganoporella*. Quart. J. Micr. Sci. xliii, pp. 225-297, pls. 12 & 13.
8. HEMPEL, —. Über ein bei Chemnitz gefundenes Moosschleimtierchen (*Cristatella mucedo* Cuv.) und gesammelte Statoblasten desselben. Ber. Ges. Chemnitz xiv, pp. lxvi-lxviii.
9. LADEWIG, F. Über die Knospung der ektoprokten Bryozoen. Zeitschr. wiss. Zool. lxvii, pp. 323-339, Taf. 18.
10. MAPLESTONE, C. M. Further descriptions of the Tertiary Polyzoa of Victoria. Part II. P. R. Soc. Victoria xii, pp. 1-13, pls. 1 & 2 (omitted last year).
11. —. Further descriptions of the Tertiary Polyzoa of Victoria. Part III. T. c. pp. 162-169, pls. 17 & 18. Part IV. Op. cit. vol. xiii, pp. 1-8, pls. 1 & 2.
12. NICKLES, J. M & BASSLER, R. S. A Synopsis of American Fossil Bryozoa including bibliography and synonymy. Bull. U. S. Geol. Surv., No. 173, 663 pp.
13. NEVIANI, A. Materiali per una bibliografia italiana degli studi sui Briozoi viventi e fossili dal 1800 al 1900. Boll. Nat. xx, pp. 104-109, 122-125.
14. —. Briozoi neozoici di alcune località d' Italia. Boll. Soc. zool. Ital. An. 9 (2 Ser. Vol. i), fasc. 1-2, pp. 58-68, 1 fig.
15. NICKERSON, W. S. Double Loxosomæ. Amer. Natural. xxxiv, pp. 891-895, 6 figg.
16. NORDGAARD, O. Polyzoa. Norwegian N. Atlantic Exped. Zool. 1876-1878. 4to, Christiania, 1900, pp. 1-30, 1 pl. and 1 map.
17. ORTMANN, A. E. Synopsis of the Collections of Invertebrate fossils made by the Princeton Expedition to Southern Patagonia. Amer. J. Sci. (4) x, pp. 368-381.
18. PHILIPPS, E. G. Report on the Polyzoa collected by Dr Willey from the Loyalty Isles, New Guinea and New Britain. Zool. Results (Willey), Part iv, pp. 439-450, pls. xlii & xliii.
19. REMÉŠ, M. Bemerkungen über Süßwasserbryozoen Nordmährens. Ver. Ges. Wien I, pp. 1-5.
20. ROBERTSON, ALICE. The Bryozoa. Papers from the Harriman Alaska Expedition vi. P. Washington Ac. ii, pp. 315-340, pls. xix-xxi.
21. —. Studies in Pacific Coast Entoprocta. P. Calif. Ac. (3) ii, pp. 323-348, pl. 16.
22. ROGERS, A. F. A new genus and new species of Bryozoans from the Coal Measures of Kansas and Missouri. Kansas quart. ix, No. 1, pp. 1-12, pls. 1-4.

23. [ROGERS, A. F.] Occurrence of the Bryozoan Genus *Rhabdomeson* in America. T. c. pp. 173 & 174, 3 figg.  
TODD, R. A. [See ALLEN & TODD (1).]
24. STEWART, C. Descriptive and illustrative catalogue of the physiological series of comparative anatomy contained in the Museum of the Royal College of Surgeons of England. Vol. i, 2nd edit. 1900.  
*Bryozoa*, p. 55, pls. xiii & xiv, illustrating the mechanism of flexible joints.
25. TATE, R. On the occurrence of Marine Fossiliferous Rocks at Kerguelen Island. Tr. R. Soc. S. Austral. xxiv, pp. 104-108, pls. 2 & 3.  
Impressions of *Polyzoa*.
26. \*TRETIAKOW, D. Bryozoa und Mollusca des Wolgathals im Gouvernement Jaroslav. Trav. Soc. St Petersburg. C. R. 1900, No. 2, pp. 111-117. Abstr. p. 124. [Bibliog. Zool. Zool. Anz.]
27. VERRILL, A. E. Additions to the Tunicata and Molluscoidea of the Bermudas. Tr. Connect. Ac. x, pp. 588-594, pl. 70 and 2 text-figg.  
*Bryozoa*, pp. 592-594.
28. WATERS, A. W. Bryozoa from Franz-Josef Land, collected by the Jackson-Harmsworth Expedition, 1896-1897. J. Linn. Soc. xxviii, pp. 43-105, pls. 7-12, text figg.
29. WHITFIELD, R. P. List of Fossils, types and figured specimens, used in the Palæontological work of R. P. Whitfield, showing where they are probably to be found at the present time. Ann. N. York Ac. xii, pp. 139-186.  
*Bryozoa*, p. 147.
30. ZSCHOKKE, F. Die Tierwelt der Hochgebirgsseen. Denk. Schweiz. Ges. 1900, 400 pp., 8 pls. and 4 maps.  
*Bryozoa*, pp. 115-119.

## II. SUBJECT INDEX.

### (a) GENERAL BIOLOGY.

Avicularium—of normal form when the mandible is contained in the beak, it is vibraculoid in the contrary case but there is no essential difference between avicularia and vibracula and all possible intermediate gradations, p. 159; CALVET, Thèse, Montpellier, 1900.

Bibliography; NEVIANI, Boll. Nat. xx; NICKLES & BASSLER (12).

Bionomics. Regeneration, movement and branching of *Gonypodaria ramosa*, n. sp., pp. 337-343; ROBERTSON (21).

Blastogenesis. *Bugula*, *Valkeria*, *Gemellaria*, *Aïtea*; origin of polypide and avicularia; LADEWIG, Zeitschr. wiss. Zool. lxvii, p. 323.

Degeneration. Periodic degeneration of the polypides after attainment of sexual maturity with subsequent regeneration, p. 134; pseudo-stato-blasts in *Bugula*, p. 137; degeneration of *Ectoprocta* in general, p. 417; CALVET, Montpellier, 1900.

Development of the polypide of *Bugula*, p. 130; embryology and metamorphosis of *Ectoprocta*, p. 319; CALVET, t. c.

Environment. Physical conditions of existence of *Defrancia lucernaria*, p. 21; *Menipea normani* and *Kinetoskia arborescens* living at  
ing 1000 metres in ice-cold water:  
Exped. Zool.

Histology. Larva of *Bugula sabatieri*, p. 91; CALVET, Montpellier, 1900.

Histolysis of larval organs in *Ectoprocta*, p. 375; CALVET, t. c.

Incubation. Development from segmentation to formation of ciliated larva in ovicell of *Bugula sabatieri*, p. 82; discharge of the larvæ, p. 89; incubation-chambers of *Ectoprocta*, p. 259; CALVET, t. c.

Integuments. *Ectoprocta*, p. 163; double ectocyst with cavity called hypostega between the lamellæ in *Cellaria* and many other Cheilostoma, p. 167; CALVET, t. c.

Metamorphosis. Larva of *Bugula sabatieri*, p. 104; degeneration of principal larval organs, p. 107, &c.; fixation of larva and its transformation into the cystid stage, p. 109; CALVET, t. c.

Nervous system. *Bugula sabatieri*, p. 146; of *Ectoprocta*, p. 426; CALVET, t. c.

Ovicell. The two vesicles which compose an ovicell arise by budding from two contiguous bryozooids of the same longitudinal series, in *Bugula*, p. 132; ovicells of *Ectoprocta*, p. 160; absent in the *Ctenostoma*, p. 161; CALVET, t. c.

Physiology. Protraction of the polypide by fluid pressure, pp. 63 and 273; periodicity of retraction of polypide, each retraction corresponding with an act of deglutition, p. 64; excretion by leucocytes, &c. p. 70; expulsion of the brown body, p. 422; CALVET, t. c.

Reproduction. Autofecundation in the body-cavity of each bryozoide of *Bugula sabatieri*, p. 81; passage of the fertilised eggs into the intervesicular cavity of incubation of the ovicell, p. 82; gemmation, pp. 123 and 389; CALVET, t. c.

*Steganoporella*. Systematic Monograph, p. 225; HARMER, Quart. J. Micr. Sci. xliii.

Teratology. Double *Loxosoma*; NICKERSON, Amer. Natural. xxxiv, p. 891.

Typology; WHITFIELD, Ann. N. York Ac. xii, p. 147.

Variation. Statoblasts of *Pectinatella magnifica*; DAVENPORT, Amer. Natural. xxxiv, p. 959.—Tentacles of *Ectoprocta*, p. 183; CALVET, Montpellier, 1900.

#### (b) GEOGRAPHICAL.

Alaska:—Account of 37 species of which 5 new; ROBERTSON, P. Washington Ac. ii, p. 315.

American Fossil Bryozoa; NICKLES & BASSLER, Bull. U. S. Geol. Surv. No. 173.

Arctic:—Bryozoa of Spitzbergen; bathymetrical distribution, p. 539; BIDENKAP, Fauna Arctica.—N. Atlantic; NORDGAARD, Norwegian N. Atlantic Exped. Zool.

Franz-Josef Land:—Bryozoa, p. 43; WATERS, J. Linn. Soc. xxviii.

Bermudas:—Bryozoa; VERRILL, Tr. Connect. Ac. x, p. 592.

+Kansas:—Bryozoa from the Coal Measures; ROGERS, Kansas quart. ix, pp. 1 & 173.

Pacific Coast:—*Ectoprocta*, p. 323; ROBERTSON, P. Calif. Ac. (3) ii.

+Patagonia:—Fossil Bryozoa, p. 370; ORTMANN, Amer. J. Sci. (4) x.

Loyalty Islands, etc.; PHILIPPS, Zool. Results (Willey), Part iv, p. 439.

Moravia:—Freshwater Bryozoa, p. 1, *Plumatella* and *Cristatella*; REMEŠ, Verh. Ges. Wien.

Chemnitz, Saxony:—Occurrence of *Cristatella* and its statoblasts; HEMPEL, Ber. Ges. Chemnitz xiv, p. lxvi.

France:—Bryozoan faunule of Cette comprises 103 species of which the author prepared a systematic description illustrated by an atlas of 85 plates in MS. in 1896; the whole was destroyed in the conflagration of the

Exhibition of Montpellier; of the 103 determined species only 2 are described as new, p. 150; CALVET, Thèse, Montpellier, 1900.

†Italy:—Neozoic Bryozoa; NEVIANI, Boll. Soc. zool. Ital. (2 Ser. Vol. 1) An. 9, p. 58.

Salcombe Estuary:—Polyzoa; ALLEN & TODD, J. Mar. Biol. Ass. vi, p. 204.

Switzerland:—Bryozoa of the mountain lakes; ZSCHOKKE, Denk. Schweiz. Ges. p. 115.

†Victoria:—Tertiary Polyzoa; MAPLESTONE, Parts ii–iv, P. R. Soc. Victoria, Vola. xii, xiii.

### III. SYSTEMATIC.

#### ENTOPROCTA.

*Barentsia timida*, n. sp., p. 594; VERRILL, Tr. Connect. Ac. x.

*Gonypodariu ramosa*, p. 337, n. sp.; ROBERTSON, P. Calif. Ac. (3) ii.

*Myosoma*, n. g., *spinosa*, n. sp., p. 324; ROBERTSON, t. c.

#### ECTOPROCTA.

#### GYMNOLÆMA.

##### CYCLOSTOMA.

†*Acanthocladia pinnata*, p. 11, n. sp.; ROGERS, Kansas quart. ix.

†*Cystodictya inequimarginata, divisa*, n. spp.; ROGERS, t. c., pp. 2 & 3.

*Defrancia lucernaria*, M. Sars, pl. 1, figg. 16 & 17; NORDGAARD, Norwegian N. Atlantic Exped. Zool.

†*Diploporaria*, n. n., p. 42. [Cryptostomata]; NICKLES & BASSLER, Bull. U. S. Geol. Surv., No. 173.

*Entalophora capitata*, n. sp., on stems and roots of hydroids at Sitka, 10 fms., p. 328, pl. xxi, figg. 11–13; ROBERTSON, P. Washington Ac. ii.

*E. deflexa* Smitt, pl. i, figg. 10 & 11; NORDGAARD, Norwegian N. Atlantic Exped. Zool.

†*Fenestella hexagonalis*, p. 4, *dentata*, p. 5, *kansasensis*, p. 5, *ovatipora*, p. 6, *missouriensis*, p. 6, n. spp.; ROGERS, Kansas quart. ix.

*Lichenopora truncata*, n. sp., Lifu, pl. 43, fig. 14 & 14 a, p. 449; PHILIPPS, Zool. Results (Willey) Part iv.

†*Melicerita triforis*, n. sp., p. 370; ORTMANN, Amer. J. Sci. (4) x.

†*Pinnatopora pyriformipora*, p. 9, *ptiloporoidea*, p. 10, *multiopora*, p. 10, n. spp.; ROGERS, Kansas quart. ix.

†*Polypora aspera*, p. 6, *flexuosa*, p. 7, *elliptica*, p. 7, *triangularis*, p. 8, n. spp.; ROGERS, t. c.

†*Reteporidra*, n. n., p. 40 [Cryptostomata]; NICKLES & BASSLER, Bull. U. S. Geol. Surv., No. 173.

*Reticulipora intricaria* Smitt, pl. 1, fig. 12; NORDGAARD, Norwegian N. Atlantic Exped. Zool.

†*R. patagonica*, n. sp., p. 370; ORTMANN, Amer. J. Sci. (4) x.

†*Rhabdomeson americanum*, n. sp.; ROGERS, Kansas quart. ix, p. 173.

- †*Rhombocladia*, n. g., p. 11, *delicata*, n. sp., p. 12; ROGERS, t. c.  
 †*Septopora interporata*, p. 11, n. sp.; ROGERS, t. c.  
 †*Stenopora spinulosa*, *spissa*, n. spp.; ROGERS, t. c. pp. 1 & 2.  
 †*Streblotrypa ulrichi*, *striatopora*, n. spp.; ROGERS, t. c. pp. 3 & 4.  
 †*Tennysonia subcylindrica*, n. sp., p. 370; ORTMANN, Amer. J. Sci. (4) x.  
 †*Thamniscus tenuiramus*, p. 9, n. sp.; ROGERS, Kansas quart. ix.

## CHEILOSTOMA.

- †*Amastigia acuminata*, p. 164, n. sp.; MAPLESTONE, Part iii, P. R. Soc. Victoria xii.  
 †*Amphiblestrum crassissimum*, *robustum*, *bispinosum*, p. 3, *concauum*, p. 4; MAPLESTONE, Part iv, op. cit. xiii.  
 †*Bicellaria elongata*, p. 167, n. sp.; MAPLESTONE, Part iii, op. cit. xii.  
*Brettia frigida*, p. 51, *minima*, p. 52, n. spp.; WATERS, J. Linn. Soc. xxviii.  
*Bugula*. Revision of the 5 species found at Cette, p. 22; CALVET, Thèse, Montpellier, 1900.  
*Bugula sabatieri*, n. sp., Cette, p. 19, Monographic study of this species, pp. 28-147; CALVET, t. c.  
*B. harmsworthii*, n. sp., p. 54; WATERS, J. Linn. Soc. xxviii.  
*B. purpurotincta*, Norman, on *Styela* and on rocks, Alaska, California, Great Britain, Scandinavia, p. 320, pl. xx, figg. 5 & 6, *flabellata*, J. V. Thompson, on a limpet shell, Sitka, 10 fms; ROBERTSON, P. Washington Ac. ii.  
 †*Caberea morningtoniensis*, p. 164, n. sp.; MAPLESTONE, Part iii, P. R. Soc. Victoria xii.  
 †*Caleschara parva*, p. 4, n. sp.; MAPLESTONE, Part iv, op. cit. xiii.  
 †*Calwellia olwayensis*, p. 163, n. sp.; MAPLESTONE, Part iii, op. cit. xii.  
*Canda retiformis* Pourt., common at Lifu, pl. 42, fig. 1, p. 441; PHILIPPS, Zool. Results (Willey), Part iv.  
 †*Catenaria tenuis*, n. sp.; MAPLESTONE, Part ii, P. R. Soc. Victoria xii.  
 †*Catenariopsis* n. g., *morningtoniensis*, n. sp.; MAPLESTONE, Part ii, t. c.  
 †*Catenicella nutans*, *conica*, *rotundata*, *personata*, *halli*, *acuminata*, *papillata*, *baccata*, *ampliata*, *dennanti*, *hiulca*, *acutirostris*, Victoria, n. spp.; MAPLESTONE, Part ii, t. c.  
 †*Cellaria enormis*, *crassimarginata*, p. 166, *depressa*, *tumida*, p. 167, n. spp.; MAPLESTONE, Part iii, t. c.  
 †*C. biaperta*, *biseriata*, p. 1, n. spp.; MAPLESTONE, Part iv, op. cit. xiii.  
*Cellepora longirostris* MacG., Lifu, pl. 43, figg. 15 & 15a, p. 448; PHILIPPS, Zool. Results (Willey), Part iv.  
*C. surcularis* Pack. = *C. incrassata* Smitt., p. 525; BIDENKAP, Fauna Arctica.  
 †*Cellularia triangulata*, p. 163, n. sp.; MAPLESTONE, Part iii, P. R. Soc. Victoria xii.  
 †*Characodoma* n. g., *halli*, n. sp.; MAPLESTONE, Part iv, op. cit. xiii, p. 7.  
 †*Costaticella* n. g., type *C. lineata* (MacG.), *escharoides*, n. sp.; MAPLESTONE, Part ii, op. cit. xii.  
*Didymia triseriatis*, n. sp., New Caledonia, pl. 42, fig. 2 & 2a, p. 442; PHILIPPS, Zool. Results (Willey), Part iv.  
 †*Digenopora* n. g., *compta*, n. sp.; MAPLESTONE, Part ii, P. R. Soc. Victoria xii.  
*Escharoides rosacea* Busk, p. 517, Taf. x, fig. 8; BIDENKAP, Fauna Arctica.  
*E. spinigera*, n. sp., Lifu, 35 fms, pl. 43, fig. 12, p. 448; PHILIPPS, Zool. Results (Willey), Part iv.  
*Flustra lichenoides*, n. sp., on shells, worm tubes, ascidians and rocks at low tide, Alaska, California, p. 322, pl. xx, figg. 7 & 8; ROBERTSON, P. Washington Ac. ii.

- Kinetoskias arborescens* Kor. Dan., Sogne Fiord, 1229 metres, the greatest known depth of any Norwegian fiord; NORDGAARD, Norwegian N. Atlantic Exped. Zool.
- Lepralia feegeensis* Busk, Lifu, pl. 43, fig. 7, p. 446, *tuberculata*, n. sp., Lifu, 35 fms., pl. 43, fig. 8, p. 446, *calyciformis*, n. sp., Lifu and Torres Straits, fig. 9 & 9a; PHILIPPS, Zool. Results (Willey), Part iv.
- L. borealis*, p. 73, n. sp.; WATERS, J. Linn. Soc. xxviii.
- Membranipora mülleri* n. n., p. 532, Taf. ix, fig. 1; BIDENKAP, Fauna Arctica.
- M. sandalia*, n. sp., on sponge, Yakutat, Alaska, p. 324, pl. xx, fig. 9 & xxi, fig. 10; ROBERTSON, P. Washington Ac. ii.
- †*M. spiculifera*, p. 1; *morningtoniensis*, *dennanti*, *incurvata*, p. 2, n. spp.; MAPLESTONE, Part iv, P. R. Soc. Victoria xiii.
- Menipea erecta*, n. sp., on an Ascidian, Sitka, Alaska, 10 fms., p. 317, pl. xix, figg. 1 & 2; ROBERTSON, P. Washington Ac. ii.
- M. normani*, n. sp., 1134 metres, pl. 1, figg. 2-8; NORDGAARD, Norwegian N. Atlantic Exped. Zool.
- †*M. retroversa*, p. 164, *bicellata*, *biaviculata*, p. 165, n. spp.; MAPLESTONE, Part iii, P. R. Soc. Victoria xii.
- Monoporella polymorpha*, n. sp., with two kinds of zoecia, Lifu, pl. 42, figg. 3 & 3a, *spinifera*, n. sp., Lifu, fig. 4; PHILIPPS, Zool. Results (Willey), Part iv.
- Mucronella articulata*, n. sp., Lifu, 35 fms., pl. 43, fig. 11, p. 447; PHILIPPS, t. c.
- M. sincera* Smitt., pl. 1, figg. 13-15; NORDGAARD, Norwegian N. Atlantic Exped. Zool.
- Myrionium coarctatum* M. Sars, pl. 1, fig. 1; NORDGAARD, t. c.
- M. coarctatum* Sars, p. 514, Taf. ix, figg. 3 and x, fig. 1, *subgracile* Orb., p. 515, Taf. ix, fig. 4; BIDENKAP, Fauna Arctica.
- †*Palmicellaria quadrifrons*, p. 6, *uniserialis*, p. 7, n. spp.; MAPLESTONE, Part iv, P. R. Soc. Victoria xiii.
- Porella concinna* Busk, p. 516, Taf. ix, fig. 6, *proboscidea* Hcks., p. 533, Taf. x, fig. 2, *elegantula* var. *palmata* Bid. fig. 7; BIDENKAP, Fauna Arctica.
- P. glaciata*, p. 78, n. sp., *inflata*, n. n., p. 83, *Porella* ? *obesa*, n. sp., p. 84; WATERS, J. Linn. Soc. xxviii.
- †*Pustulopora attenuata*, p. 61, with fig.; NEVIANI, Boll. Soc. zool. Ital. ix.
- Retepora denticulata* Busk, Lifu, pl. 43, fig. 13, p. 449; PHILIPPS, Zool. Results (Willey), Part iv.
- Rhamphostomella scabra* (Fabr.), p. 523, Taf. x, fig. 7, *fortissima*, n. sp., p. 524, Taf. ix, fig. 8; BIDENKAP, Fauna Arctica.
- Schizoporella sinuosa* Busk, p. 513, Taf. x, fig. 3; BIDENKAP, t. c.
- S. triangula* Hincks, New Britain, 40 fms., pl. 42, fig. 5, p. 445, *depressa*, n. sp., Lifu, fig. 6 & 6a, p. 445; PHILIPPS, Zool. Results (Willey), Part iv.
- S. harmsworthii*, n. n., p. 65, *elmwoodiæ*, n. sp., p. 66; WATERS, J. Linn. Soc. xxviii.
- Scrupocellaria scabra* Van Ben., growing among seaweed, Kadiak, Alaska. Holarctic species, also British, p. 318, pl. xix, figg. 3-4; ROBERTSON, P. Washington Ac. ii.
- †*S. glomerata*, p. 163, n. sp.; MAPLESTONE, Part iii, P. R. Soc. Victoria xii.
- †*Selenaria cribrosa*, p. 4, n. sp.; MAPLESTONE, Part iv, op. cit. xiii.
- Smittia marmorea* Hincks, Lifu, 35 fms., pl. 43, fig. 10, p. 447; PHILIPPS, Zool. Results (Willey), Part iv.
- S. patens* (Smitt.), p. 519, Taf. ix, fig. 5; BIDENKAP, Fauna Arctica.
- S. trispinosa* Johnst., pl. 1, fig. 9; NORDGAARD, Norwegian N. Atlantic Exped. Zool.
- †*Smittia jacksonii*, n. n. p. 87; WATERS, J. Linn. Soc. xxviii.



- Steganoporella sulcata*, p. 246, *tubulosa*, p. 250, *simplex*, p. 253, *conneza*, p. 254, *auriculata*, p. 257, *haddoni*, p. 268, *buskii*, p. 272, *truncata*, p. 276, *alveolata*, p. 287, n. spp.; HARMER, Quart. J. Micr. Sci. xliii.
- †*Stenostomaria solida* (Waters); MAPLESTONE, Part ii, P. R. Soc. Victoria xii.
- †*Strongylopore*, n. g., *complanata*, *nitida*, *ampullacea*, *cuneiformis*, n. spp.; MAPLESTONE, Part ii, t. c.
- †*Strophopora excavata, sulcata*, n. spp.; MAPLESTONE, Part ii. t. c.
- †*Thalamoporella rosieri* (Audouin), form *longirostrata* nov., p. 5, *gracilis*, p. 6, n. sp.; MAPLESTONE, Part iv, op. cit. xiii.

## CTENOSTOMA.

- Alcyonidium cellarioides*, n. sp., Cetta, p. 151; CALVET, Montpellier, 1900.
- A. cervicornis*, n. sp., on seaweed and on *Cellaria borealis*, Alaska, p. 330, pl. xxi, figg. 14–17; ROBERTSON, P. Washington Ac. ii.
- A. disciforme* Smitt; NORDGAARD, Norwegian N. Atlantic Exped. Zool.
- A. mytili* (Dal.), p. 530, Taf. x, fig. 4; *hirsutum* (Flem.), p. 530, Taf. x, fig. 5; *gelatinosum* L., fig. 6; BIDENKAP, Fauna Arctica.
- Cryptopolyzoon*, n. n. for *Cryptozoon* Dendy; DENDY, Zool. Anz. xxiii, p. 391.
- Zoobotryon pellucidum* Ehr.; Isle of Pines (New Caledonia), also found in the Atlantic, Mediterranean, Red Sea and Indian Ocean, p. 450; PHILIPPS, Zool. Results (Willey), Part iv.

## PHYLACTOLÆMA.

- Plumatella fungosa* = *Alcyonella fungosa* Pallas, p. 2, *repens* L. var. *typica*, var. *emarginata*, p. 3; REMÉZ, Verh. Ges. Wien l.
- P. repens* L., freshwater, Alaska, San Francisco, Europe, p. 331; ROBERTSON, P. Washington Ac. ii.

# X. CRUSTACEA.

(Including GIGANTOSTRACA.)

BY

ALBERT WILLIAM BROWN, B.A., F.L.S.

## CONTENTS.

	Page		Page
Introduction . . . . .	2	SYSTEMATIC— <i>continued</i> .	
I. TITLES (Crustacea) . . . .	3	Stomatopoda . . . . .	36
II. BIOLOGY.		Edriophthalma . . . . .	36
1. Morphology and Anatomy .	13	Cumacea . . . . .	36
2. Physiology . . . . .	13	Isopoda & Anisopoda .	37
3. Development . . . . .	14	Amphipoda . . . . .	38
4. Habits, etc. . . . .	14	Leptostraca (Vacant)	
5. Variation & Evolution .	14	Entomostraca . . . . .	39
6. General Biology . . . . .	14	Phyllopoda . . . . .	39
7. Distribution . . . . .	15	Branchiopoda . . . . .	39
8. Classification & Nomen- clature . . . . .	15	Cladocera . . . . .	40
9. Methods . . . . .	15	Copepoda . . . . .	40
10. Miscellaneous . . . . .	15	Ostracoda . . . . .	42
III. DISTRIBUTION . . . . .	15	Cirripedia . . . . .	46
IV. SYSTEMATIC.		GIGANTOSTRACA . . . . .	46
Malacostraca . . . . .	21	I. Titles . . . . .	46
Podophthalma . . . . .	21	II. Biology . . . . .	47
Decapoda . . . . .	21	III. Distribution . . . .	47
Schizopoda . . . . .	36	IV. Systematic . . . . .	47
		PANTOPODA (Vacant)	

## INTRODUCTION.

THE RECORD of CRUSTACEA for 1900 is in every way larger than its immediate predecessors. Moreover the publications of the year are of considerable interest and importance and show that no decline is likely to take place in the energy with which the Class is studied. The largest Monograph of the year is EDWARDS & BOUVIER's beautiful volume on the *Crustacea* collected during the scientific expeditions of the *Travailleur* and *Talisman*. This volume contains descriptions of the *Brachyura* and *Anomura* and is designated "*Crustacés décapodes, Première partie.*"

The systematic portion of this Record is very lengthy this year, the *Decapoda* comprising by far the greater portion of it. Some lengthy papers have also been issued dealing with fossil *Ostracoda*.

A place of importance must be given to the papers describing Messrs GAMBLE & KEEBLE's researches on the colour variation and the physiology of coloration in *Hippolyte varians*. The paper published in Quart. J. Micr. Sci. is admirably illustrated.

*Crustacea* have always been a favourite group for observations and experiment on variation and a considerable number of papers record observation on this subject and on such other subjects of general interest as Regeneration, Relation to Surroundings, Commensalism, etc. SCOURFIELD's method of examining the swimming habits of *Daphnia* may here be mentioned.

A useful summary of the Deep Sea Zoological work of the "Investigator" has been prepared by Major ALCOCK who has also issued Part VI. of his "Materials for a Carcinological Fauna of India."

The Editor of the "American Naturalist" has for some time past been issuing Synopses of North American Invertebrates which can hardly fail to be of service to collectors and lead to an increase in the number of workers in any group. Initial difficulties in studying many of the Arthropod groups are probably responsible for the comparatively small number of workers on them and such summaries as Miss RATHBUN & Miss RICHARDSON have issued will go a long way towards overcoming these initial difficulties in the case of American Students. A work which may be mentioned here is YOUNG's "Stalk-Eyed *Crustacea* of British Guiana, W. Indies and Bermuda." Criticism of the nomenclature of this book by STEBBING will be found in *Nature*, lxiv, p. 98.

Important contributions have been made by COUTIÈRE in his Monograph on the *Palæmonidae* of the Fresh waters of Madagascar and by GIESBRECHT in his volume on "*Die Asterocheriden des Golfes von Neapel.*"

GRUVEL & WELTNER, and especially the former Author, have given a good deal of attention to the *Cirripedia* during the year. On the other hand the amount of matter published on such groups as the *Amphipoda* and *Isopoda* is less than usual. SARS has completed his account of the *Crustacea* of Norway, vol. iii, and the high character of this model work is well maintained.

HOLT & BEAUMONT have published a useful paper on the *Schizopoda* of Ireland which is issued apparently in three forms, viz. as a part of the Tr. Dublin Soc., as one of the "Studies from the Marine Laboratory of the Royal Dublin Society" and as part of a "Survey of the Fishing Grounds, West Coast of Ireland." It is well to mention this fact to avoid confusion in the future.

---

## I. TITLES.

[For GIGANTOSTRACA, see p. 46.]

1. ABSOLON, K. Einige Bemerkungen über mährische Höhlenfauna. Zool. Anz. xxiii, pp. 1-6, 57-60, 189-195.
2. ALCOCK, A. Materials for a Carcinological Fauna of India. No. 6. The Brachyura Catometopa or Grapsoidea. J. Asiat. Soc. Bengal lxix, pp. 279-486.
3. —. A Summary of the Deep Sea Zoological work of the Royal Marine Survey Ship "Investigator" from 1884-1897. Calcutta, 4to, pp. 49.  
[Reprinted from the Scientific Memoirs by Medical Officers of the Army of India, Part xi.]
- 3A. — & ANDERSON, A. R. S. Illustrations of the Zoology of the Royal Indian Marine Surveying Steamer "Investigator."  
Crustacea, Part v, pls. xxviii-xxxii (1897).  
Part vi, pls. xxxiii-xxxv (1898).  
Part vii, pls. xxxvi-xlv (1899).  
Part viii, pls. xlvi-xlviii, and Index, Part i, 1892-1900 (1900).
4. ALLEN, E. J. & TODD, R. A. The Fauna of the Salcombe Estuary. J. Mar. Biol. Ass. vi, pp. 151-217, 1 map.  
ANDERSON, A. R. S. [See ALCOCK & ANDERSON (3A).]
5. ANDREWS, C. W. A Monograph of Christmas Island (Indian Ocean). London, 8vo, 1900, Land Crustacea, pp. 163-165.
6. ANON. Changes of Colour in Prawns. Nature lxi, pp. 552 & 553.  
[An account of the work of Messrs Keeble & Gamble.]
7. AMBERG, C. Arbeiten aus dem botanischen Museum des eidg. Polytechnikums. I. Beiträge zur Biologie des Katzensesee. Vierteljahrschr. Ges. Zurich 1900, pp. 59-136, pls. ii-vi.
8. AURIVILLIUS, C. W. S. Animalisches Plankton aus dem Meere zwischen Jan Mayen, Spitzbergen, K. Karls Land und der nordkuste Norwegens. Svenska Ak. Handl. xxxii, No. 6, pp. 69.
9. BATESON, W. On a case of Homoeosis in a Crustacean of the Genus *Asellus*—Antennule replaced by a Mandible. P. Zool. Soc. London 1900, pp. 268-271.  
BEAUMONT, W. I. [See HOLT & BEAUMONT (86).]
10. BENHAM, W. B. Zoological Results of Trawling Trials off the Coast of Otago. Tr. N. Zealand Inst. xxxii, pp. 1-3.
11. BERG, C. Datos sobre algunos crustaceos nuevos para la fauna argentina. Comun. Mus. Buenos Aires i, pp. 223-235.
12. BOLAM, G. Monstrosity in the Crab. Hist. Berwick Club xvii, p. 80, pl. i.
13. BORDAGE, E. On the Spiral Growth of Appendages in course of Regeneration in Arthropoda. Ann. Nat. Hist. Ser. 7, v, pp. 314-316.

14. BORRADAILE, L. A. On a small collection of Decapod Crustaceans from Freshwater in North Borneo. P. Zool. Soc. London 1900, pp. 93-95.
15. —. On some Crustaceans from the South Pacific, Part iv, the Crabs. T. c. pp. 568-596, pls. xl-xlii.
16. —. On some Crustaceans from the South Pacific. Part v. Arthrostracans and Barnacles. T. c. pp. 795-799, pl. li.
- BOUVIER, E. L. [See EDWARDS & BOUVIER (56 & 57).]
17. BRADY, G. S. On *Pyropsyllus coriaceus* and other Crustacea taken at Alnmouth, Northumberland, in 1899. Tr. Northumb. Soc. xiii, pp. 429-442, pls. xi-xiii.
18. —. An Afternoon's Dredging off Cullercoats. T. c. pp. 442-444.
19. BUTCHINSKY, P. Zur Entwicklungsgeschichte der *Nebalia geoffroyi*. Zool. Anz. xxiii, pp. 493-495.
20. —. Die Metazoen fauna der Salzseelimane bei Odessa. T. c. pp. 495-497.
21. CALMAN, W. T. On a Collection of Brachyura from Torres Straits. Tr. Linn. Soc. viii, pp. 1-50, pls. i-iii.
22. CAULLERY, M. & MESNIL, F. Sur le rôle des phagocytes dans la dégénérescence des muscles chez les Crustacés. C.R. Soc. Biol. 1900, pp. 9 & 10.
23. CHAPMAN, F. Two New Species of *Ostracoda* of Tithonian Age from Neesselsdorf, Austria. Geol. Mag. vii, 1900, pp. 325 & 326, 2 figg. in text.
24. CHEVREUX, E. Campagnes de la Melita. Description d'un Amphipode nouveau appartenant au genre *Grubia* Czerniawski. Bull. Soc. zool. France xxv, pp. 95-101, 5 figg. in text.
25. CHILTON, C. A New Zealand Species of the Amphipodan Genus *Cyproidia*. Ann. Nat. Hist. (Ser. vii), vol. v, pp. 241-246, pl. v.
26. —. The Subterranean Amphipoda of the British Isles. J. Linn. Soc. xxviii, pp. 140-161, pls. xvi-xviii.
27. —. Note on the Fresh-water Crayfishes of New Zealand. Tr. N. Zealand Inst. xxxii, pp. 13-17.
28. CHMIELEWSKI, C. Die Leperditien der obersilurischen Geschiebe des Gouvernement Kowno und der Provinzen Ost- und Westpreussen. Schr. Ges. Königsb. xli, pp. 1-38, pls. i & ii.
29. CLEVE, P. T. Plankton collected by the Swedish Expedition to Spitzbergen in 1898. Svenska Ak. Handl. xxii, Art. 3, pp. 51, 4 pls.
30. —. Plankton Researches in 1897. T. c. No. 7, pp. 33.
31. —. The Plankton of the North Sea, the English Channel and the Skagerak in 1898. T. c. No. 8, pp. 53, figg. in text.
32. —. Geographical distribution of Atlantic Copepoda and their physical conditions. Ofv. Ak. Forh. lvii, pp. 139-144.
33. —. Plankton from the Red Sea. T. c. pp. 1025-1038.
34. COCKERELL, T. D. A. & PORTER, W. A new Crayfish from New Mexico. P. Ac. Philad. 1900, pp. 434 & 435, fig. in text.

35. COSMOVICI, L. C. Contribution à l'étude de la Faune de la Roumanie. Bull. Soc. zool. France xxv, pp. 153-163, 10 figg. in text.  
CONTE, A. [See VANEZ & CONTE (172).]
36. COUTIÈRE, H. Les Palaemonidæ des eaux douces de Madagascar. Ann. Sci. Nat. xii, pp. 249-342, pls. x-xiv.
37. —. Note sur *Callianassa grandidieri* n. sp. Bull. Mus. Paris 1899, pp. 285-287, fig. in text.
38. —. Sur quelques Macroures des eaux douces de Madagascar. Op. cit. 1900, pp. 23-25. [See 40.]
39. —. Note préliminaire sur quelques Crustacés décapodes recueillis par l'expédition antarctique belge. T. c. pp. 238-241. [See 41.]
40. —. Sur quelques Macroures des eaux douces de Madagascar. C.R. Ac. Sci. cxxx, pp. 1266-1268. [See 38.]
41. —. Note préliminaire sur les Crustacés décapodes provenant de l'expédition antarctique belge. T. c. pp. 1640-1643. [See 39.]
42. —. Sur quelques Alpheidæ des côtes américaines. Op. cit. cxxxi, pp. 356-358.
43. CUNNINGTON, W. A. The Crabs of our Sea Shore. Irish Natural. ix, pp. 120-127.
44. DADAY, E. Helminthologische Studien. Einige im Süßwasser-Entomotraken lebende Cercocystis-Formen. Zool. Jahrb. Syst. xiv, pp. 161-214, pls. x-xii.
45. —. Crustacea, pp. 12, in Fauna Regni Hungariæ iii.
46. DELAGE, Y. La question de la Sacculine. Bull. Soc. zool. France xxv, pp. 72 & 73.
47. DE MAN, J. G. Note sur une petite collection de crustacés décapodes provenant de la côte d'Angola (Afrique occidentale). Mem. Soc. zool. France xiii, pp. 31-64, pls. i & ii.
48. DOLLFUS, A. & VIRÉ, A. Crustacea Isopoda in Fauna Hawaiensis or the Zoology of the Sandwich (Hawaiian) Isles, edited by David Sharp. Vol. ii, Part v, pp. 521-526, pl. xx.
49. —. Sur une nouvelle espèce d'Isopode souterrain, le *Cæcospheroma faucheri*. C.R. Ac. Sci. cxxx, pp. 1564-1566.
50. DOFLEIN, F. Ueber eine neue Süßwasserkrabbe aus Columbien gesammelt von I. K. H. Prinzessin Therese. SB. Ak. München xxx, pp. 121-124, figg. in text.
51. —. Weitere Mitteilungen über dekapode Crustaceen der k. bayerischen Staatssammlungen. T. c. pp. 125-145.
52. —. Die dekapoden Krebse der arktischen Meere. Art. x in RÖMER & SCHAUDINN's Fauna Arctica, Vol. i, pp. 313-362, 1 fig. in text.
53. DOUWE, C. von. Die freilebenden Süßwasser-Copepoden Deutschlands; *Canthocamptus wierzejskii* Mrázek. Zool. Anz. xxiii, p. 105.
54. DUBOIS, R. Du cuivre normal dans la série animale (Animaux marins et terrestres). Ann. Soc. Linn. Lyon xlvii, pp. 93-97.
55. DUNCKER, G. On variation in the Rostrum in *Palamontes vulgaris* Herbst. Amer. Natural. xxxiv, pp. 621-633.

56. EDWARDS, A. MILNE & BOUVIER, E. L. Crustacés décapodes. Première partie. Brachyures et Anomoures. Exped. Scient. du Travailleur et du Talisman pendant les années 1880, 1881, 1882, 1883, pp. 206, 32 pls.  
(Abbreviated as Decap. Exped. Trav.)
57. — & —. *Heterocarpus grimaldii*, espèce nouvelle recueillie par le Talisman, l'Hirondelle et la Princesse Alice. Bull. Soc. zool. France xiv, p. 56.
58. ZÖGER, J. G. Foraminiferen und Ostracoden aus den Kreideemergeln der oberbayerischen Alpen. Abh. Bayer. Ak. xxi, pp. 1-230, pls. i-xvii.
59. EKMAN, S. Cladoceren aus Patagonien, gesammelt von der schwedischen Expedition nach Patagonien, 1899. Zool. Jahrb. Syst. xiv, pp. 62-84, pls. iii & iv.
60. EMBLETON, ALICE L. *Goidelia japonica*—a New Entozoic Copepod from Japan associated with an Infusorian (*Trichodina*). J. Linn. Soc. xlviii, pp. 211-229, pls. xxi & xxii.
61. ESTEMAN, M. M. Variations in the Crest of *Daphnia hyalina*. Amer. Natural. xxxiv, pp. 879-890, 6 figg. in text.
62. FAUVEL, P. *Palæmon serratus* Penn. à rostre monstrueux. Feuille Natural. xxx, pp. 223 & 224, figg. in text.
63. FULTON, S. W. & GRANT, F. E. Note on the Occurrence of the European Crab, *Carcinus maenas* Leach, in Port Phillip. Victorian Natural. xvii, pp. 147 & 148.
64. FUHRMANN, C. Beitrag zur Biologie des Neuenburger Sees. Biol. Centrbl. xx, pp. 85-96, 120-128.
65. GAMBLE, F. W. The Power of Colour Change in Animals. Tr. Manchester Micr. Soc. 1899, pp. 92-106.
66. — & KEEBLE, F. W. *Hippolyte varians*: a Study in Colour-change. Quart. J. Micr. Soc. xliii, pp. 589-698, pls. xxxii-xxxvi.  
— [See KEEBLE & GAMBLE (91).]
67. GARSTANG, W. The Plague of Octopus on the South Coast, and its effect on the Crab and Lobster Fisheries. J. Mar. Biol. Ass. vi, pp. 260-273.
68. GEINITZ, E. & SCHACKO, G. Das Kreidevorkommnis von Kalkberg bei Rehna. Arch. Ver. Mecklenb. liii, pp. 94-96.
69. GIARD, A. Sur un type oublié de la famille des *Monostrillidae* (*Thamatoessa armoricana* Hesse) et sur un cas nouveau de parasitisme chez les *Monostrilla*. Bull. Soc. ent. France 1900, pp. 395-397.
70. GIESBRECHT, W. Die Asterocheriden des Golfes von Neapel und der angrenzenden Meeres-Abschnitte. Fauna Stat. Neapel xxv, pp. 217, 11 pls.
71. —. Mittheilungen über Copepoden, 12-14. Mt. Stat. Neapel xiv, pp. 39-82, pls. ii-v.
72. GOURRET, P. Sur la faune carcinologique de l'étang de Birre. C.R. Ass. France 1900, 2<sup>me</sup> partie, pp. 735-740, fig. in text.
73. GRAEFFE, E. Übersicht der Fauna des Golfes von Triest nebst Notizen über Vorkommen, Lebensweise, Erscheinungs- und Laichzeit der einzelnen Arten. v. Crustacea. Arb. Inst. Wien xiii, pp. 33-48.

GRANT, F. L. [See FULTON & GRANT (63).]

74. GRUVEL, A. Sur quelques nouvelles espèces appartenant au genre *Dichelaspis* Darwin. Bull. Mus. Paris 1900, pp. 109-111.
75. —. Sur une espèce nouvelle du genre *Scalpellum* provenant de la Collection du Muséum d'histoire naturelle de Paris. T. c. pp. 188 & 189.
- 75A. —. Sur quelques espèces nouvelles de genre *Scalpellum* provenant de la Campagne du Talisman. T. c. pp. 189-194.
76. —. Sur une espèce nouvelle du genre *Lepas* Linné. T. c. pp. 241 & 242.
77. —. Sur les espèces nouvelles appartenant au genre *Verruca* provenant de la Campagne du Talisman. T. c. pp. 242-244.
78. GUNDLACH, J. Contribución al Estudio de los Crustáceos de Cuba. Notas compiladas y completadas por el Dr J. I. Torralbas. An. Ac. Habana xxxvi, pp. 292-305, 326-332, 362-374, xxxvii, pp. 51-65, figg. in text.
79. GUNTHER, R. T. Contributions to the Natural History of Lake Urmi, N.W. Persia, and its neighbourhood. J. Linn. Soc. xxvii, pp. 345-453, pls. xxi-xxx. [Crustacea, pp. 394-398.]
80. HARTWIG, W. Abermals eine neue *Candona* aus der Provinz Brandenburg, *Candona lobipes* nov. spec. Zool. Anz. xxiii, pp. 51-53, 2 figg. in text.
81. —. Berichtigung bez. einiger von G. W. Müller jüngst beschriebener Candon-Arten. T. c. pp. 569-572.
82. —. Über eine neue *Candona* der Provinz Brandenburg: *Candona reniformis* Hartwig, nov. spec. SB. Ges. naturf. Berlin 1900, pp. 139-144, fig. in text.
83. —. Über eine neue *Candona* der Provinz Brandenburg: *Candona holzkampfi* Hartwig, nov. spec. T. c. pp. 149-152.
84. Über eine *Alona* aus der Provinz Brandenburg: *Alona protzi* Hartwig, nov. spec. T. c. pp. 228-230.
85. HECTOR, SIR JAMES. Spider Crabs. Tr. N. Zealand Inst. xxxii, p. 423 [Note on n. sp.].
86. HOLT, E. W. L. & BEAUMONT, W. I. Report on the Crustacea Schizopoda of Ireland. Tr. Dublin Soc. Ser. ii, Vol. vii, Part vii, pp. 221-252, pl. xvi, and figg. in text.  
[This paper is also issued separately as Studies from the Marine Laboratory of the Royal Dublin Society. Vol. i, Part i. Survey of Fishing Grounds, West Coast of Ireland, 1890-1891: x. Report on the Crustacea Schizopoda of Ireland.]
- HOVEY, E. G. [See WHITFIELD & HOVEY (184).]
87. KANE, W. F. DE V. Entomostraca from Lough Rea. Irish Natural ix, pp. 12 & 13.
88. KAUFMANN, A. Cypriden und Darwinuliden der Schweiz. Rev. Suisse Zool. viii, pp. 209-423, pls. xv-xxxi.
89. —. Über zwei neue *Candona*-Arten aus der Schweiz. Zool. Anz. xxiii, pp. 108-110.
90. —. Neue Ostracoden aus der Schweiz. T. c. pp. 131-133.

KEEBLE, F. W. [See GAMBLE & KEEBLE (66).]



91. [KEEBLE, F. W.] & GAMBLE, F. W. Physiologie de la coloration chez *Hippolyte varians*. Bull. Mus. Paris 1900, pp. 185-188.
92. KEW, H. W. Notes on Spinning Animals. Sci. Gossip vii, pp. 36-38, 75-78, 130 & 131.
93. KISHINONYE, K. On the Nauplius stage of *Penæus*. Zool. Anz. xxiii, pp. 73-76, 3 figg. in text.
94. KUMAGUSU MINIKATA. Crab Ravages in China. Nature lxi, p. 491.
95. LAKOWITZ. Die niedersten Pflanzen- und Thierformen des Klostersees bei Karthaus. Schr. Ges. Danzig x, pp. 58 & 59.
96. LANCHESTER, W. F. On some *Malacostracous Crustaceans* from Malaysia in the collection of the Sarawak Museum. Ann. Nat. Hist. (Ser. 7), vol. vi, pp. 249-265, pl. xii.
97. —. On a collection of Crustaceans made at Singapore and Malacca. Part I, *Crustacea Brachyura*. P. Zool. Soc. London 1900, pp. 719-770, pls. xlv-xlvii.
98. LIENENKLAUS, E. Die Tertiär-Ostrakoden des mittlerer Norddeutschlands. Zeitschr. Deutsch. geol. Ges. lii, pp. 497-550, pls. xix-xxii.
99. LÖRENTHEY, J. Palæontologiai Tanulmányok a Harmadkorú rákok köréből. [Palæontological Studies on the Tertiary. Crustacea Memoir.] Math. term. Közlem. Magyar Ak. xxvii, 2 Szám, pp. 1-208, pls. 9 & 2.
100. LOVETT, E. Notes on the Stalk-eyed *Crustacea* of the British Coasts and references to Essex Forms. Essex Natural. xi, pp. 252-256.
101. MACMUNN, C. A. On the Gastric Gland of *Mollusca* and Decapod *Crustacea*: its Structure and Functions. Phil. Trans. cxcii, pp. 1-34, pls. i-iv.
102. McARDLE, A. F. Natural History Notes from the Royal Indian Marine Survey Ship "Investigator," Commander T. H. Heming, R.N. commanding. Ser. iii, No. 4. Some results of the dredging season, 1899-1900. Ann. Nat. Hist. (Ser. vii), vi, pp. 471-478.
103. MARLOTH, R. Notes on the mode of growth of *Tubicinella trachealis*, the Barnacle of the Southern Right Whale. Tr. S. African Soc. xi, pp. 1-6, 2 figg. in text.
104. MARSH, C. D. The Plankton of Fresh-water Lakes. Science xi, pp. 374-389.
105. MEARNS, E. A. Remarks on an unusually large Marine Lobster caught off Newport, Rhode Island. P. Soc. Washington xiii, pp. 168 & 169.  
MESNIL, F. [See CAULLERY & MESNIL (22).]
106. MORGAN, T. H. Further experiments on the regeneration of the appendages of the Hermit Crab. Anat. Anz. xvii, pp. 1-9, figg. in text.
107. MORTON, A. A large Tasmanian Crab. Nature lxii, p. 496 and fig. [Letter to the Editor.]
108. NAMIAS, I. Ostracodi fossili della Farnesina e Monte Mario presso Roma (Nota preventiva). Atti Soc. Modena, Ser. iv, Vol. ii, pp. 1 & 2.
109. NETTOVICH, L. v. Neue Beiträge zur Kenntniss der Arguliden. Arb. Inst. Wien xiii, pp. 1-32, pls. i & ii.

110. NOBILI, G. Contribuzioni alla cognoscenza della Fauna Carcinologica della Papuasìa, delle Molucche e dell' Australia. Ann. Mus. Genova (Ser. 2a, xx) xl, pp. 230-282.
111. —. Decapodi e Stomatopodi Indo-Malesi. T. c. pp. 473-523.
112. —. Descrizione di un nuovo *Palæmon* di Giava e osservazioni sulla *Callianassa turnerana* Wh. del Camerun. Boll. Mus. Torino xv, No. 379, 4 pp.
113. NORMAN, A. M. British Amphipoda of the tribe *Hyperideæ* and the Families *Orchestideæ* and some *Lysianassideæ*. Ann. Nat. Hist. (Ser. vii), vol. v, pp. 126-144.
114. —. British Amphipoda: Fam. *Lysianassideæ* (concluded). T. c. pp. 196-216, pl. vi.
115. —. British Amphipoda: Families *Pontoporeideæ* to *Ampelisceidæ*. T. c. pp. 326-346.
116. —. British Amphipoda. iv. Families *Stegocephalideæ* to *Ædicerideæ* (part). Op. cit. vi, pp. 32-51, pl. iii.
117. ORLANDI, S. Sulla struttura dell' intestino della "*Squilla mantis*". Rond. Atti Soc. Ligustica xi, pp. 221-223.
118. ORTMANN, A. E. Bronn's Klassen und Ordnungen des Thierreichs. Band v, Abt. ii, Arthropoda, Lief 57-59, pp. 1233-1280, pls. cxxiii-cxxv.
119. —. Synopsis of the collections of Invertebrate Fossils made by the Princeton Expedition to Southern Patagonia. Amer. J. Sci. x, pp. 368-381, figg. in text.
120. PÉGOT, G. Sur quelques anomalies présentées par l'écrevisse, la sangsue, la roussette et le mouton. C.R. Soc. Biol. 1900, pp. 322-324.
121. PÉREZ, C. Sur un épicaride nouveau, *Crioniscus equitans*. Bull. Sci. France Belgique xxxiii, pp. 483-492, figg. in text.
122. —. Sur un épicaride nouveau, le *Crioniscus equitans*. C.R. Ac. Sci. cxxx, pp. 520-522, 2 figg. in text.
- PORTER, W. [See COCKERELL & PORTER (34).]
123. PRZIBRAM, H. Experimentelle Studien über Regeneration (Vorläufige Mitteilung). Biol. Centrbl. xx, pp. 525 & 526.
124. RÁDL, E. Über die Krümmung der zusammengesetzten Arthropodenaugen. Zool. Anz. xxiii, pp. 372-379.
125. —. Untersuchungen über den Bau des Tractus opticus von *Squilla mantis* und von anderen Arthropoden. Zeitschr. wiss. Zool. lxvii, pp. 551-598, pl. xxxii.
126. RATHBUN, M. J. Synopses of North-American Invertebrates. vii. The Cyclometopous or Cancroid Crabs of North America. Amer. Natural. xxxiv, pp. 131-143, 5 figg. in text.
127. —. Synopses of North-American Invertebrates. x. The *Oxyrhynchous* and *Oxystomatous* Crabs of North America. T. c. pp. 503-520, 15 figg. in text.
128. —. Synopses of North-American Invertebrates. xi. The *Quemmetopous* or Grapoid Crabs of North America. T. c. pp. 522-531, 15 figg. in text.

129. [RATHBUN, M. J.] Results of the Branner-Agassiz Expedition to Brazil. I. The Decapod and Stomatopod *Crustacea*. P. Washington Ac. ii, pp. 133-156, pl. viii.
130. —. The Decapod Crustaceans of West Africa. P. U. S. Mus. xxii, pp. 271-316 [No. 1199].
131. RICHARDSON, H. Synopses of North American Invertebrates: viii. The Isopoda, Part I, pp. 207-230, Part II, pp. 295-309. Amer. Natural. xxxiv.
132. —. Results of the Branner-Agassiz Expedition. II. The Isopod Crustaceans. P. Washington Ac. ii, pp. 157-159, 4 figg. in text.
133. RICHTERS, F. Beiträge zur Kenntnis der Fauna der Umgegend von Frankfurt a. M. Ber. Senckenberg. Ges. 1900, pp. 21-44, pls. iii-vi.
134. ROULE, L. Sur les genres *Palythoa* et *Epizoanthus*. C.R. Ac. Sci. cxxxi, pp. 279-281.
135. SAINT-JOSEPH, BARON DE. Sur quelques invertébrés marins des côtes du Sénégal (Annélides polychètes, nématode endoparasite d'annélide parasite et crustacé décapode parasite). Ann. Sci. nat. xii, pp. 217-248, pls. viii & ix.
136. SAMTER, M. & WELTNER, W. *Mysis*, *Pallasiella* and *Pontoporeia* in einem Binnensee Norddeutschlands. Zool. Anz. xxiii, pp. 638-654.
137. SARS, G. O. An account of the Crustacea of Norway. Vol. iii, *Cumacea*, Parts iii-x, pp. 25-115, pls. 17-72. Bergen, 8vo, 1900.
138. —. On *Epischura baikalensis*, a new Calanoid from Baikal Lake. Annuaire Mus. St. Petersb. v, pp. 226-238, pl. vi.
139. —. Description of *Iheringula paulensis* G. O. Sars, a new Generic Type of *Macrothricidae* from Brazil. Arch. Naturv. Christian. xxii, No. 6, pp. 27, 2 pls.
140. —. On some Indian *Phyllopoda*. T. c. Art. 9, pp. 30, 4 pls.
141. SAYCE, O. A. *Phreatoicoides*, a new Genus of Fresh-water Isopoda. P. Soc. Victoria xii, pp. 122-138, pls. x-xii.
142. —. *Niphargus pulchellus*, a new Victorian Blind Amphipod. T. c. pp. 152-159, pls. xv & xvi.
143. —. *Phreatoicus shephardi*, a new species of Fresh-water Isopoda from Victoria. Op. cit. xiii, pp. 25-28, pl. iii.
144. —. *Janirella*, a new Genus of Isopoda from Fresh-water, Victoria. T. c. pp. 124-130, pls. xviii & xix.
145. —. Some peculiar habits of Crabs. Victorian Natural. xvii, pp. 74 & 75.
146. —. A method of Preserving Crustacea. T. c. pp. 75-78.  
SCHACKO, G. [See GEINITZ & SCHACKO (68).]
147. SCHMEL, O. Text-book of Zoology treated from a Biological Stand-point, Part III, Invertebrata, pp. vii, & 307-493, many figg. in text. (Translated by R. Rosenstock and J. T. Cunningham.)  
SCOTT, A. [See THOMPSON & SCOTT (166).]
148. SCOTT, T. On Copepods living in the Nostrils of Fishes. Ann. Scott. Nat. Hist. ix, pp. 153-155.
149. Notes on Scottish Cumaceans. T. c. pp. 215-224.
150. —. Notes on some Crustacea from Fairlie and Hunterstown, Firth of Clyde. Tr. Soc. Glasgow v (N. S.), pp. 346-355.

151. SCOURFIELD, J. Note on *Scapholeberis mucronata* and the Surface-Film of Water. J. Quekett Club, Ser. ii, vol. vii, pp. 309-312, fig. in text.
  152. —. The swimming peculiarities of *Daphnia* and its allies, with an account of a new method of examining living *Entomostraca* and similar organisms. T. c. pp. 395-404, 7 figg. in text.
  153. SELIGO, A. Westpreussische Krebsthiere. Schr. Ges. Danzig x, pp. 60-63.
  154. SHERBORN, C. D. An Index to the generic and trivial names of Animals described by Linnæus in the 10th and 12th editions of his "Systema Naturæ." Manchester Museum Handbooks, Publication 25. Manchester, 8vo, 1899, pp. 108.
  155. STEAD, D. G. Zoological Notes from Sydney. Zoologist lviii, pp. 345-357, pl. iv.
  156. STEBBING, T. R. R. Marine Investigations in South Africa. South African Crustacea, Cape of Good Hope. Department of Agriculture, pp. 1-66, pls. i-iv. [Abbreviated as S. Afric. Crust.]
  157. —. On some Crustaceans from the Falkland Islands collected by Mr Rupert Vallentin. P. Zool. Soc. London 1900, pp. 517-568, pls. xxxvi-xxxix.
  158. —. *Crustacea Amphipoda* in Fauna Hawaiiensis or the Zoology of the Sandwich (Hawaiian) Isles. Edited by David Sharp. Vol. ii, Part v, pp. 527-536, pl. xxi.
  159. —. Arctic Crustacea. Bruce Collection. Ann. Nat. Hist. (Ser. vii) v, pp. 1-16.
  160. STEUER, A. Das Zoo-Plankton der "alten Donau" bei Wien. Biol. Centrbl. xx, pp. 25-32, 1 fig. in text.
  161. —. Die Diptomiden des Balkan zugleich ein Beitrag zur Kenntniss des *Diptomus vulgaris* Schmeil. SB. Ak. Wien cix, pp. 315-333, pls. i & ii.
  162. —. Mittheilungen über einige Diptomiden Oesterreichs. Verh. Ges. Wien I, pp. 305-308.
  163. STINGELIN, T. Beitrag zur Kenntnis der Süßwasserfauna von Celebes. *Entomostraca*. Rev. Suisse Zool. viii, pp. 193-207, pl. xiv.
  164. THIELE, J. Diagnosen neuer Arguliden-Arten. Zool. Anz. xxxiii, pp. 46-48.
  165. THOMPSON, I. C. Report on the two collections of Tropical and more Northerly Plankton. Tr. Liverp. biol. Soc. xiv, pp. 262-294, pl. v & 2 charts.
  166. — & SCOTT, A. Some recent additions to the Copepoda of Liverpool Bay. T. c. pp. 139-144 and pl. viii.
  167. THOMSON, G. M. On some New Zealand *Schizopoda*. J. Linn. Soc. xxvii, pp. 482-486, pls. xxxiii & xxxiv.
  168. THOR, S. Description préliminaire d'une nouvelle espèce du genre *Sphyrion* Cuv. (*Sphyrion australicus* n. sp.), d'Australie comparée à *Sphyrion lævis* Quoy et Gaimard. Ann. Sci. Nat. xi, pp. 277-282, pls. xvii & xviii.
- TODD, R. A. [See ALLEN & TODD (4).]

169. TUA, P. Contribuzione alla conoscenza degli Isopodi terrestri italiani. Boll. Mus. Torino xv, No. 374, pp. 15, plate.
170. ULRICH, E. O. New American Palaeozoic Ostracoda. No. 1. *Ctenobollina* and *Kirkbya*. J. Cincinnati Soc. xix, pp. 179-185, pl. viii.
171. VALLENTIN, R. Notes on the Fauna of Falmouth, from 1st January to 10th Sept. 1898, and from May 1899 to the end of that year. J. Inst. Cornwall xiv, pp. 196-209 and chart.
172. VANEY, C. & CONTE, A. Sur un Chondracanthide nouveau parasite de *Clinus argentatus* Riss. Rev. Suisse Zool. viii, pp. 97-105, pl. x.
173. VEJDOVSKÝ, F. Ueber einige Süßwasser-Amphipoden. II. Zur Frage der Augenrudimente von *Niphargus*. SB. Böhmisch Ges. 1900, Art. i, 12 pp., 1 pl.
174. VERHOEFF, C. Zur Biologie von *Ischyropsalis*. Zool. Anz. xxiii, pp. 106 & 107.
175. —. Über paläarktische Isopoden (2. Aufsatz). [Zugleich über europäische Höhlenfauna. 4. Aufsatz.] T. c. pp. 117 et seq., 11 figg. in text.  
[Part I was published in Zool. Anz. xix.]
176. VIRÉ, A. Les Sphæromiens des cavernes et l'origine de la faune souterraine. C.R. Ass. Franc. 1900, 2<sup>me</sup> Partie, pp. 711-714.  
— [See DOLLFUS & VIRÉ (48 & 49).]
177. VOSSELER, J. Über die Männchen von *Phromina* und ihre secundären Geschlechtsmerkmale. Zool. Anz. xxiii, pp. 392-405, 6 figg. in text. [See also t. c. p. 440.]
178. WARREN, E. On the reaction of *Daphnia magna* (Strauss) to certain changes in its environment. Quart. J. Micr. Soc. xliii, pp. 199-224.
179. WEBB, W. M. Notes on Woodlice. Sci. Gossip vi, pp. 295 & 296.
180. WEHMEYER, E. L'action de l'oxyde de carbone et d'autres gaz sur les muscles de l'*Astacus fluviatilis*. Arch. ital. Biol. xxxiv, pp. 405-408, figg. 38-42.
181. WELTNER, W. Die Cirripeden der Arktis. Art. ix in RÖMER & SCHAUDINN's Fauna Arctica, vol. i, pp. 287-312, pl. viii and 1 fig. in text.  
WELTNER, W. [See SAMTER & WELTNER (136).]
182. WESENBERG-LUND, —. Von dem Abhängigkeitsverhältnis zwischen dem Bau der Plankton-organismen und dem spezifischen Gewicht des Süßwassers. Biol. Centrbl. xxii, pp. 606-619 & 644-656.
183. WHITFIELD, R. P. Notice of two very large Lobsters in the collection of the American Museum of Natural History. Bull. Amer. Mus. xii, pp. 191-194, pl. ix.
184. — & HOVEY, E. G. Catalogue of the Types and Figured Specimens in the Palaeontological Collection of the Geological Department, American Museum of Natural History. Op. cit. xi, pp. 1-356.
185. WILLIAMS, S. R. The specific gravity of some Fresh-water Animals in relation to their habits, development and composition. Amer. Natural. xxxiv, pp. 95-108.
186. WHITLEGGE, T. Crustacea, Part I. Scientific Results of the Trawling Expedition of H.M.C.S. "Thetis" off the coast of New South Wales in February and March, 1898. Mem. Austral. Mus. iv, pp. 133-199, pls. xxxiii-xxxv.

187. WOODWARD, H. Note on a Crustacean, *Mesodromilites birleyi* gen. et sp. nov., from the Gault of Folkestone, Kent. Geol. Mag. vii, 1900, pp. 61-64, figg. in text.
188. —. Further Notes on Podophthalmous Crustaceans from the Upper Cretaceous Formation of British Columbia, etc. T. c. pp. 392-401, pls. xv & xvi, pp. 433-435, pl. xvii.
189. YOUNG, C. G. The Stalk-Eyed Crustacea of British Guiana, W. Indies and Bermuda. London, 8vo, pp. xix & 514, 6 pls. and many figg. in text.
190. ZIMMER, C. Die arktischen Cumaceen. Art. xiii in RÖMER & SCHAUDINN's Fauna Arctica, vol. i, pp. 409-444, 9 figg. in text.
191. ZSCHOKKE, F. Die Tierwelt der Hochgebirgsseen. Denk. Schweiz. Ges. xxxvii, pp. 400, 8 pls., maps. [Published also separately.]
192. ZYKOFF, W. Das Putamoplankton der Wolga bei Saratow. (Vorläufige Mittheilung.) Zool. Anz. xxiii, pp. 625-627.

## II. BIOLOGY.

### 1. ANATOMY AND MORPHOLOGY.

- Anatomy of *Cypridae*, p. 219; KAUFMANN (88).  
 Anatomy of *Cumacea*, pp. 93-99, pls. lxx-lxxviii; SARS (137).  
 Anatomy and Histology of the Shell glands in *Argulidae*; NETTOVICH (109).  
 Morphology of the cavernicolous *Sphaeromidae*; VIRÉ (176).  
 Morphology and Anatomy of *Asterocheridae*, p. 123, pl. xi; GIESBRECHT (70).  
 A blind Amphipod from Victoria; SAYCE (142).  
 Eye rudiments of *Niphargus*; VEJDovsky (173).  
 The Curvature of the Compound Eyes of Arthropoda; RÄDL (124).  
 Structure of the Optic Tract of *Squilla mantis*; RÄDL (125).  
 Structure of intestine of *Squilla mantis*; ORLANDI (117).  
 Structure of the Gastric Gland of Decapoda; MACMUNN (101).

### 2. PHYSIOLOGY.

- Physiology of colouration in *Hippolyte varians*; KEEBLE & GAMBLE (91).  
 Power of Colour Change in Crustacea; GAMBLE (85).  
 Colour Change in *Hippolyte varians*; GAMBLE & KEEBLE (66).  
 Change of Colour in Prawns; Nature lxi, p. 552.  
 Absence of Glycogen from the Gastric Gland of *Decapoda*; MACMUNN (101).  
 Functions of the Gastric Gland in *Decapoda*; MACMUNN (101).  
 Action of gases on the muscles of *Astacus fluviatilis*; WEHMEYER (180).  
 Phagocytosis and the degeneration of the muscles in Crustacea; CAULLERY & MESNIL (22).  
 Gland cells of the Skin of *Argulidae*; NETTOVICH (109), p. 23.  
 Solvent action of ferment secreted by *Tubicinella trachealis* on the epidermis of the Southern Right Whale; MARLOTH, Tr. S. Afric. Soc. xi.  
 Spiral Growth of Appendages in course of Regeneration in *Arthropoda*.  
 BORDAGE, Ann. Nat. Hist. v, p. 314.  
 Regeneration of Appendages in the Hermit Crab; M.



- Experiments on regeneration ; PRZIBRAM (123).  
 Specific Gravity of Crustacea in relation to habits ; WILLIAMS (185).  
 Phosphorescence in an Ostracod, p. 356 ; STEAD (155).

### 3. DEVELOPMENT, &c.

- Secondary sexual characters of males of *Phronima* ; VOSSELER (177).  
 Embryology of *Nebalia geoffroyi*, p. 495 ; BUTCHINSKY, Zool. Anz. xxiii.  
 Development of Cumacea, pp. 100-105, pl. lxix ; SARS (137).  
 The Nauplius stage of *Penæus* ; KISHINONYE (93).  
 Discussion of certain facts in the life-history of *Sacculina* ; DELAGE (46).  
 Specific Gravity of Crustacea in relation to Development ; WILLIAMS (185).

### 4. HABITS, COMMENSALISM, &c.

- Commensalism of a Pagurid and Annelid, p. 3 ; BENHAM (10).  
 Various animals commensal with Crustacea will be found mentioned in  
 BORRADAILE, P. Z. S. 1900, pp. 568-596.  
 Habit of Crabs of decorating themselves with sea-weed, etc. ; SAYCE,  
 Victorian Natural. xvii.  
 Habits of *Cypridæ* ; KAUFMANN (88).  
 Swimming habits in *Daphnia* and allied genera ; SCOURFIELD (152).  
 Cercocystis in Freshwater Entomostraca ; DADAY, E. (44).  
 Parasitism in *Monostrella* ; GIARD (69).

### 5. VARIATION, EVOLUTION, &c.

- Abnormally large rostrum in *Palæmon serratus* ; FAUVEL (62).  
 Variation in Rostrum of *Palæmonetes vulgaris* ; DUNCKER (55).  
*Daphnia hyalina*, variation in the crest and seasonal variation ;  
 ENTEMAN (61).  
 Homoeosis in an *Asellus* ; BATESON (9).  
 Abnormalities in the generative system of the Crayfish ; PÉGOT (120),  
 p. 322.  
 Variation in *Diaptomidæ* ; STEUER (161), p. 316.  
 Measurement of unusually large Lobster ; MEARNES (105).  
 Notes on two large Lobsters ; WHITFIELD (183).  
 Monstrosity in a specimen of *Cancer pagurus* ; BOLAM (12).  
 A large Tasmanian Crab ; MORTON, Nature lxii, p. 496.  
 Origin of the Cavernicolous species of *Sphæromma* ; VIRÉ (176).

### 6. GENERAL BIOLOGY.

- Biology of Arctic Crustacea, p. 355 ; DOFLEIN (52).  
 Biology of *Asterocheridæ*, p. 199 ; GIESBRECHT (70).  
 Biology of *Ischyropsalis* ; VERHOEFF (174).  
 Periodicity of Plankton Crustacea ; AMBERG (7).  
 Occurrence, Appearance, Periodicity etc. of the Crustacea in the Gulf of  
 Trieste ; GRAEFFE (73).  
 Relation of *Scapholeberis mucronata* to the surface film of water ; SCOUR-  
 FIELD (151).  
 Notes on Plankton *Copepoda* ; THOMPSON (165), pp. 275 and 294.  
 Relation between structure of Plankton organisms and the specific  
 gravity of Fresh-water ; WESENBURG-LUND (182).  
 Reaction of *Daphnia magna* to environmental changes ; WARREN (178).

## 7. DISTRIBUTION.

Crustacea of Caves; ABSOLON (1).  
 Distribution of British Subterranean *Amphipoda*, p. 143; CHILTON (26).  
 Crustacea of High Mountain Lakes; ZSCHOKKE (191).  
 Distribution of *Asterocheridae*, p. 199; GIESBRECHT (70).  
 Geographical distribution of Arctic Crustacea, p. 357; DOFLEIN (52).  
 Geographical distribution of Atlantic *Copepoda*; CLEVE (32).  
 Distribution of Arctic *Cumacea*; ZIMMER (190), p. 436.

## 8. CLASSIFICATION AND NOMENCLATURE.

Classification of the *Catometopa*, diagnoses of families etc.; ALCOCK (2).  
 The *Telphusidae* evicted from the *Catometopa*, *Geocarcinus* placed in the *Telphusidae*; ALCOCK (2).  
 For Synopsis of North American Crabs see RATHBUN (126-128).  
 Key to the sub-orders etc. of W. African *Decapoda*, p. 272; RATHBUN (130).  
 Diagnostic tables of Arctic *Cumacea*, p. 430; ZIMMER (190).  
 Key to spp. of *Asterocheridae*, p. 112; GIESBRECHT (70).  
 Key table to Swiss *Ostracoda*, p. 404; KAUFMANN (88).  
 Systematic position and Classification of *Asterocheridae*, p. 45; GIESBRECHT (70).  
 Classification of the *Copepoda*, p. 437; BRADY, Tr. Northumb. Soc. xiii.  
 Discussion of the genus *Euphausia* and list of characters suitable for specific distinctions, p. 537; STEBBING, P. Z. S. 1900.  
 Index to Linnæan names of *Crustacea*; SHERBORN (154).  
 Notes on British spp. of *Amphipoda*; NORMAN, Ann. Nat. Hist. v.

## 9. METHODS.

New method of examining living Entomostraca and similar small organisms; SCOURFIELD (152), p. 396.  
 Method of preserving *Crustacea*; SAYCE (146).

## 10. MISCELLANEOUS.

Plague of Octopus on the South Coast in relation to Crab and Lobster Fisheries; GARSTANG (67).  
 Ravages of Crabs in China; KUMAGUSU MINIKATA, Nature lxi, p. 491.  
 Perforation of boulders by an Isopod Crustacean, p. 348; STEAD (155).

## III. DISTRIBUTION.

## A. LAND AND FRESHWATER FORMS.

*Palæarctic Region.*

## i. NEW SPECIES.

Sauve: n. sp. of *Cæcospheroma*; DOLLFUS & VIRÉ (49).  
 Brandenburg: n. sp. of *Alona*; HARTWIG (84): n. sp. of *Candona*; HARTWIG (80): 2 n. spp. of *Candona*; HARTWIG, SB. Ges. naturf. Berlin 1900, pp. 139 & 149.



## 16 Crust.

### X. CRUSTACEA.

Switzerland : n. sp. of *Candona* ; KAUFMANN (88) : n. spp. of *Candona* ; KAUFMANN (89) : 3 n. gg. and 10 n. spp. of *Ostracoda* ; KAUFMANN (89).  
 Italy : 4 n. spp. of terrestrial *Isopoda* ; TUA (169).  
 Sardinia : n. sp. of *Porcellio* ; TUA (169).  
 Lake Baikal : n. sp. of *Calanidæ* ; SARS (138).

#### ii. LOCAL FAUNÆ.

Great Britain : Subterranean *Amphipoda* ; CHILTON (26).  
 Lough Ree, Ireland : *Entomostraca* ; KANE (87).  
 Italy : Terrestrial *Isopoda* ; TUA (169).—Near Rome : *Ostracoda* ; NAMIAS (107).  
 Birre : *Decapoda* ; GOURRET (72).  
 Switzerland : *Cypridæ* and *Darwinulidæ* ; KAUFMANN (88).  
 Germany : Freshwater *Copepoda* ; DOUWE (53).—North Germany, inland Lake : *Mysis*, *Pallasiella* and *Pontoporeia* ; SAMTER & WELTNER (136).  
 Karthaus, Klostersee : *Crustacea* ; LAKOWITZ (95).  
 Saratow : Plankton Crustacea of the Volga ; ZYKOFF (192).  
 Balkans : *Diaptomidæ* ; STEUER (161).

#### *Ethiopian Region.*

##### i. NEW SPECIES.

Madagascar : 2 n. spp. of *Palæmon* ; COUTIÈRE (38).

##### ii. LOCAL FAUNÆ.

Madagascar : *Palæmonidæ* ; COUTIÈRE (36) : *Macrura* ; COUTIÈRE (40).

#### *Oriental Region.*

##### i. NEW SPECIES.

Borneo : n. sp. of *Potamon* ; BORRADAILE (14).

##### ii. LOCAL FAUNÆ.

Borneo : Freshwater *Decapoda* ; BORRADAILE (14).

#### *Australian and Polynesian Region.*

##### i. NEW SPECIES.

Celebes : 2 n. spp. of *Cladocera* ; STINGELIN (163).  
 Victoria : n. g. of *Isopoda* ; SAYCE (141) : n. sp. of *Niphargus* ; SAYCE (142) : n. sp. of *Phreatoicus* ; SAYCE (143) : n. g. of *Isopoda* ; SAYCE (144).  
 Sandwich Is. : *Isopoda*, 4 n. spp. of *Armadillo* and n. sp. of *Geoligia* ; DOLLFUS (48).

##### ii. LOCAL FAUNÆ.

Celebes : *Cladocera* of fresh-water ; STINGELIN (163).  
 New Zealand : Fresh-water *Paranephrops* ; CHILTON (27).  
 Christmas Is. : Land *Crustacea* ; ANDREWS (5).  
 Sandwich Is. : *Talúridæ* ; STEBBING (158).

*Nearctic Region.*

N. America : *Isopoda* ; RICHARDSON (131).

New Mexico : n. sp. of *Cambarus* ; COCKERELL & PORTER (34).

## B. SALT LAKE FORMS.

Odessa : Crustacea of Salt Lakes ; BUTSCHINSKY (20).

Lake Urmi : *Crustacea* incl. n. sp. of *Artemia* ; GÜNTHER (79).

## C. MARINE FORMS.

*Arctic Seas.*

Arctic : *Crustacea* ; STEBBING, Ann. Nat. Hist. v, p. 1: *Crustacea* ; STEBBING (159) : *Decapoda* ; DOFLEIN (52) : *Cirripedia* ; WELTNER (181) : *Cumacea* ; ZIMMER (190).

Spitzbergen : Plankton *Crustacea* ; CLEVE (29).

*Antarctic Seas.*

Antarctic : *Crustacea* ; COUTIÈRE (39) : *Decapoda* ; COUTIÈRE (41).

*British and N. European Seas.*

## i. NEW SPECIES.

North Sea : n. sp. of *Heterochata* ; AURIVILLIUS (8).

Faroe Channel : 2 n. spp. of *Amphipoda* ; NORMAN (114) : n. sp. of *Amphipoda* ; NORMAN (113) : *Amphipoda*, 3 n. spp. ; NORMAN, Ann. Nat. Hist. v.

Norway : n. sp. of *Cumacea* ; SARS (137).

N.E. of Butt of Lewis : n. sp. of *Amphipoda* ; NORMAN (115).

Liverpool Bay : n. sp. of *Leptopsyllus* ; THOMPSON & SCOTT (167).

Alnmouth : 3 n. spp. *Crustacea* ; BRADY (17).

S.E. coast of England : n. sp. of *Amphipoda* ; NORMAN (116).

Plymouth : n. sp. of *Amphipoda* ; NORMAN (116).

## ii. LOCAL FAUNÆ.

North Sea : Plankton *Crustacea* ; CLEVE (31).

Norway : *Cumacea* ; SARS (137).

Skagerak : Plankton *Crustacea* ; CLEVE (31).

Gt. Britain : *Amphipoda* ; NORMAN (113-116).

Scotland : *Cumacea* ; SCOTT (149).

Fife : *Platyarthrus hoffmanseggii*, p. 186, EVANS, Ann. Scott. Nat. Hist. ix.

Firth of Clyde : *Crustacea* ; SCOTT (150).

Alnmouth : *Crustacea* ; BRADY (17).

Essex Coast : *Malacostraca* ; LOVETT (100).

English Channel : Plankton *Crustacea* ; CLEVE (31).

Salcombe Estuary : *Crustacea* ; ALLEN & TODD (4).

Falmouth : *Crustacea* ; VALLENTIN, J. Inst. Cornwall xiv.

W. Prussia : *Decapoda* ; SELIGO (153).

Europe : n. sp. of *Argulus* ; NETTOVICH (100).

*Atlantic Ocean.*

## i. NEW SPECIES.

- Atlantic: *Amphipoda*, n. sp. of *Grubia*; CHEVREUX (24): 2 n. sp. of *Alpheidæ*; COUTIERE (42).  
 Angola: n. sp. of *Grapsus*; DE MAN (47).  
 Monrovia: *Decapoda* n. sp. of *Clibanarius*; RATHBUN (130).  
 Senegal: n. sp. of *Polonyx* (parasitic); SAINT-JOSEPH (135).  
 S. Africa: n. sp. of *Palinurus*, n. sp. of *Callianassa*; STEBBING (156).  
 Near Azores: 5 n. spp. of *Verruca*; GRUVEL (77): 9 n. spp. of *Scalpellum*; GRUVEL (75A).—Pico (near): n. sp. of *Heterocarpus*; EDWARDS & BOUVIER (57).  
 N. America: n. sp. of *Cyclodorippe*; RATHBUN (127), p. 519.  
 Beaufort, N.C.: n. sp. of *Pinnixa*; RATHBUN (128).  
 Galveston, Texas: n. sp. of *Uca*; RATHBUN (128).  
 Pensacola, Florida: n. g. of *Pinnotheridæ*; RATHBUN (127).  
 Bogota: n. sp. of *Potamocarcinus*; DOFLEIN (50).  
 Brazil: 6 n. spp. of *Decapoda*; RATHBUN (129): *Isopoda*, n. sp. of *Bopyrus*; RICHARDSON (132): n. g. of *Macrothricidæ*; SARS (139).  
 Argentina: *Stomatopoda*, n. sp. of *Lysiosquilla*, *Apodidæ*, n. sp. of *Lepidurus*; BERG (11).  
 Patagonia: 8 n. spp. of *Cladocera*; EKMAN (59): n. sp. of *Scalpellum*; GRUVEL (75).  
 Falkland Islands: *Schizopoda*, n. sp. of *Euphausia*; STEBBING, P. Z. S. 1900, p. 545.  
 Sargasso Sea: n. sp. of *Verruca*; GRUVEL (77).

## ii. LOCAL FAUNÆ.

- Atlantic: *Copepoda*; CLEVE (32).  
 W. Coast of Ireland: *Schizopoda*; HOLT & BEAUMONT (86).  
 W. Africa: *Decapoda*; RATHBUN (130).  
 Angola: *Decapoda*; DE MAN (47).  
 S. Africa: *Decapoda*, *Isopoda*, *Copepoda*, *Cirripedia*; STEBBING, S. Afric. Crust. (156).  
 N. America: *Isopoda*; RICHARDSON (131).  
 W. Indies: *Decapoda* and *Stomatopoda*; YOUNG (189).  
 Bermuda: *Decapoda* and *Stomatopoda*; YOUNG (189).  
 Cuba: *Crustacea*; GUNDLACH (78).  
 British Guiana: *Decapoda* and *Stomatopoda*; YOUNG (189).  
 Brazil: *Isopoda*; RICHARDSON (132): *Decapoda* and *Stomatopoda*; RATHBUN (129).  
 Patagonia: *Cladocera*; EKMAN (59).  
 Falkland Islands: *Decapoda*, *Schizopoda* and *Isopoda*; STEBBING, P. Zool. Soc. London 1900, p. 517.

*Mediterranean Seas.*

## i. NEW SPECIES.

- Toulon: n. sp. of *Chondracanthidæ*; VANEY & CONTE (172).  
 Bay of Naples: 3 n. spp. of *Copepoda*; GIESBRECHT (71): 2 n. spp. of *Asterocheridæ*; GIESBRECHT (70).  
 Roumania: 8 n. spp. *Crustacea*; COSMOVICI (35).

## ii. LOCAL FAUNÆ.

Bay of Naples : *Asterocheridæ* ; GIESBRECHT (70).  
 Hungary : *Crustacea* ; DADAY (45).  
 Roumania : *Crustacea* ; COSMOVICI (35).  
 Triest : *Crustacea* ; GRAEFFE (73).

*Indian Ocean.*

## i. NEW SPECIES.

Indian Ocean : n. sp. of *Ethusa*, p. 474 ; MCARDLE (102).  
 E. Africa : n. g. and 2 n. spp. of *Argulidæ* ; THIELE (164).  
 Djibouti : n. sp. of *Dichelaspis* ; GRUVEL (74).  
 Madagascar : n. sp. of *Callianassa* ; COUTIERE (37).  
 Suez : n. sp. of *Dichelaspis* ; GRUVEL (74).  
 Aden : n. sp. of *Dotilla* ; ALCOCK (2).  
 Persian Gulf : n. sp. of *Libystes* ; ALCOCK (2).  
 Andamans : 11 n. spp. of *Grapsoidæ* ; ALCOCK (2).  
 India : 16 n. spp. of *Grapsoidæ* ; ALCOCK (2) : 3 n. spp. of *Phyllopoda* ; SARS (140).  
 Ceylon, off W. coast : n. sp. of *Cyrtomaia* ; off N.E. coast : n. sp. of *Calocaris* ; MCARDLE (101).

## ii. LOCAL FAUNÆ.

India : *Phyllopoda* ; SARS (140).  
 India and Ceylon : *Decapoda*, *Grapsoidæ* ; ALCOCK (2).

*Malaysian Seas.*

## i. NEW SPECIES.

Malay Archipelago : 2 n. spp. of *Caridina*, n. sp. of *Palæmon*, 2 n. spp. of *Potamon* ; NOBILI (111).  
 Sumatra : n. sp. of *Dichelaspis* ; GRUVEL (74).  
 Java : n. sp. of *Palæmon* ; NOBILI (112).  
 Singapore : 5 n. spp. of *Brachyura* ; LANCHESTER (97).  
 Malacca : n. sp. of *Brachyura* ; LANCHESTER (97).  
 Philippine Islands : n. sp. of *Lepas* ; GRUVEL (76).

## ii. LOCAL FAUNÆ.

Malay Archipelago : *Decapoda* and *Stomatopoda* ; NOBILI (111) : *Malaecostraca* ; LANCHESTER (96).  
 Singapore : *Brachyura* ; LANCHESTER (97).  
 Malacca : *Brachyura* ; LANCHESTER (97).

*Pacific Ocean.*

## i. NEW SPECIES.

- San Pedro Bay, Calif. : n. sp. of *Raphonotus* ; RATHBUN (128).  
 Monterey Bay : n. sp. of *Cancer*, n. sp. of *Lophopanopeus* ; RATHBUN (126).  
 San Diego : 2 n. spp. of *Lophanopeus* ; RATHBUN (126).  
 Funafuti and Rotuma : n. sp. of *Sesarma* ; BORRADAILE (15).  
 Funafuti : n. sp. of *Xenocarcinoides* and n. sp. of *Pachygrapsus* ; BORRADAILE, P. Z. S. 1900 : n. sp. of *Armadillidium*, n. sp. of *Lithotrya* ; BORRADAILE (16).  
 Rotuma : n. sp. of *Pilumnus*, n. sp. of *Xanthias*, n. sp. of *Carpiliodes*, n. sp. of *Chlorodius* ; BORRADAILE, P. Z. S. 1900.  
 Papuasias, Moluccas and Australia : *Crustacea*, 10 n. spp. ; NOBILI (110).  
 Torres Straits : 2 n. spp. of *Brachyura* ; CALMAN (21).  
 Australia : n. sp. of *Sphyrion* ; THOR (168).  
 N.S. Wales : 4 n. spp. of *Decapoda* ; WHITLEGGE (186).  
 New Zealand : n. g. of *Schizopoda* ; THOMSON (167).—Otago, N.Z. : n. sp. of *Amphipoda* ; CHILTON (25).  
 Japan : n. sp. of *Panulirus* ; DOFLEIN (51) : n. g. of *Copepoda* ; EMBLETON (60) : 2 n. spp. of *Argulus* ; THIELE (164).

## ii. LOCAL FAUNÆ.

- N. America : *Isopoda* ; RICHARDSON (131).  
 Sandwich Islands : *Isopoda* ; DOLLFUS (49).  
 Fiji : List of *Brachyura* ; BORRADAILE (15), p. 570.  
 Funafuti : List of *Brachyura* ; BORRADAILE, P. Z. S. 1900, p. 568.  
 Rotuma : List of *Brachyura* ; BORRADAILE, P. Z. S. 1900, p. 569.  
 Papuasias, Moluccas and Australia : *Crustacea* ; NOBILI (110).  
 Torres Straits : *Brachyura* ; CALMAN (21).  
 N.S. Wales : *Decapoda* ; WHITLEGGE (186).  
 New Zealand : *Schizopoda* ; THOMSON (167).

*Habitat unknown.*

- 2 n. spp. of *Dichelaspis* ; GRUVEL (74).

## D. FOSSIL FORMS.

- Palæozoic, America : 9 n. spp. of *Ostracoda* ; ULRICH (170).  
 Upper Silurian, Prussia : *Leperditia* incl. 3 n. spp. ; CHMIELEWSKI (28).  
 Cretaceous, Rehna : *Ostracoda* ; GEINITZ & SCHACKO (68).—Upper  
 Bavarian Alps : *Ostracoda* incl. n. sp. ; EGGER (58).  
 Upper Cretaceous, British Columbia : *Crustacea* incl. 4 n. spp. ; WOODWARD (188).  
 Gault, Folkestone : n. g. of *Decapoda* ; WOODWARD (187).  
 Tithonian : 2 n. spp. of *Ostracoda* ; CHAPMAN (23).  
 Tertiary, N. Germany : 40 n. spp. *Ostracoda* ; LIENENKLAUS (98).—  
 Hungary : *Crustacea* incl. 27 n. spp. ; LÖRENTHEY (99).  
 Lower Miocene, Patagonia : n. sp. of *Scalpellum* ; ORTMANN (119).

## IV. SYSTEMATIC.†

## MALACOSTRACA.

## PODOPHTHALMA.

## DECAPODA.

[The following systematic papers deal with *Decapoda*:—ALCOCK (2), ALCOCK & ANDERSON (3A), BORRADAILE (14 & 15), CALMAN (21), CHILTON (27), COCKERELL & PORTER (34), COUTIERE (36-42), DOFLEIN (50-52), DE MAN (47), EDWARDS & BOUVIER (56 & 57), GOURRET (72), GUNDLACH (78), LANCHESTER (96 & 97), LÖRENTHEY (99), LOVETT (100), MARSH (104), MCARDLE (102), NOBILI (110-112), RATHBUN (126-130), SAINT-JOSEPH (135), SELIGO (153), STEBBING (156, 157, 159), WHITLEGGE (186), WOODWARD (187 & 188), YOUNG (189).]

*Acheus lacertosus*, pl. xxxiii, figg. 1 & 1a; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *A. cursor*, p. 161, pls. xxi, figg. 15 & 16, xxii, figg. 1-3; EDWARDS & BOUVIER, Decap. Exped. Trav.

*Achelous rubro-marginatus*, Singapore, p. 746, pl. xlvi, fig. 8; LANCHESTER, P. Z. S. 1900, n. sp.

*Actæa nodulosa* var. *bullifera*, pl. xxxvii, fig. 2, *echinus*, pl. xxxvii, fig. 3, *flosculata*, pl. xxxvii, fig. 4; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *A. calculosa*, notes, p. 8; CALMAN, Tr. Linn. Soc. viii. A., miscellaneous notes on various spp. of the g. from Singapore and Malacca, p. 733; LANCHESTER, P. Z. S. 1900. *A. pulchella* var. *modesta*, notes, discussion of possible identity of *A. pulchella* and *A. modestus*, p. 251; LANCHESTER, Ann. Nat. Hist. vi.

*Actæodes tomentosus*, notes on specimens from Singapore, p. 734; LANCHESTER, P. Z. S. 1900.

*Actæomorpha lapidulus*, pl. xxviii, fig. 3, *morum*, pl. xxviii, fig. 4; ALCOCK & ANDERSON, Illustr. Zool. Investigator.

*Actæopsis* n. g. of *Brachyura* defined for *pallida*, Singapore [= *Carpiliodes pallidus* Borradaile] p. 741, pl. xlv, fig. 6; LANCHESTER, P. Z. S. 1900.

*Actumnus fissifrons*, pl. xxxviii, fig. 5, *arbutum*, pl. xxxviii, fig. 6, *tessellatus*, pl. xxxviii, fig. 9; ALCOCK & ANDERSON, Illustr. Zool. Investigator.

*Ægeon cataphractus*, notes, p. 50; STEBBING, S. Afric. Crust.

*Albunea elegans*, p. 273, pl. xxviii, figg. 22-25; EDWARDS & BOUVIER, Decap. Exped. Trav.

*Alpheida*, key to W. African genera, p. 312; RATHBUN, P. U. S. Mus. xxii.

*Alpheus shearmeii*, pl. xli, fig. 4 & 4a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.

*Anamathia rissosana*, p. 138, pl. xx, fig. 11; EDWARDS & BOUVIER, Decap. Exped. Trav.

*Anapagurus dubius*, p. 215, pl. xxviii, figg. 1-8, *lævis*, p. 217, pl. xxviii, figg. 9 & 10, *bicorniger*, p. 220, pl. xxv, figg. 14-22, *brevicarpus*, pl. xxv, figg. 23-26, xxviii, fig. 11; EDWARDS & BOUVIER, t. c.

*Anilocra capensis*, distinction from other spp. of g., p. 57; STEBBING, S. Afric. Crust.

*Arctus crenatus*, N. S. Wales, p. 194, fig. 14; WHITLEGGE, Mem. Austral. Mus. iv, n. sp.

† This sign when prefixed to a quotation indicates a fossil form or forms. When the character of a reference is not indicated the words "described" or "notes" are to be understood.

- Astaconephrops*, n. g. of *Decapoda reptantia* for *albertisii*, Katau, ♀ descr., p. 244; NOBILI, Ann. Mus. Genova xl, n. sp.
- Astacopsis australasiensis*, Bay of Sydney, descr., p. 247; NOBILI, t. c.
- Astacus*, synonymy and remarks, p. 33, *capensis*, descr., p. 34; STEBBING, S. Afric. Crust.
- Atya brevirostris* var. *de mani*, Fiume Sereinu, p. 475; NOBILI, Ann. Mus. Genova xl.
- Atyida*, key to W. African genera, p. 313; RATHBUN, P. U. S. Mus. xxii.
- Automate rugosa*, Atlantic, p. 357; COUTIÈRE, C.R. Ac. Sci. cxxxi, n. sp.
- Baptozius vinosus*, pl. xxxviii, fig. 3; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Benthesicymus investigatoris*, pl. xli, fig. 2; ALCOCK & ANDERSON, t. c.
- Bithynis*, key to W. African spp., p. 315; RATHBUN, P. U. S. Mus. xxii.
- Calappa*, key to W. African spp., p. 296; RATHBUN, t. c. *C. pustulosa*, pl. xxviii, fig. 1, *wood-masoni*, pl. xxviii, fig. 2; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- +*C. heberti*, Tertiary, Hungary, p. 113, pls. viii, figg. 1-3, ix, fig. 1; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- +*Calappilia dacica*, Tertiary, Hungary, p. 39, pl. i, figg. 5a & 6; LÖRENTHEY, t. c.
- Calastacus felix*, pl. xlii, figg. 3 & 3a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Calcinus talismani*, p. 173, pl. xxiii, figg. 15-18; EDWARDS & BOUVIER, Decap. Exped. Trav. *C. sulcatus*, colour of Brazilian specimens, p. 144; RATHBUN, P. Washington Ac. ii.
- Callianassa*, key to W. African spp., p. 308; RATHBUN, P. U. S. Mus. xxii. *C. lignicola*, pl. xlii, figg. 2-2b; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *C. martensi*, Buntal, p. 261, pl. xii, figg. 4 & 4a, notes on a ♂; LANCHESTER, Ann. Nat. Hist. vi. *C. turnerana*, Cameroons, Fresh-water, notes, p. 3; NOBILI, Boll. Mus. Torino xv, No. 379. *C.*, list of n. spp. since A. Milne-Edwards' revision of g., p. 38; STEBBING, S. Afric. Crust.
- +*C. fraasi*, Tertiary, Hungary, p. 95, pl. v, fig. 4, LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii. +*C. whiteavesii*, notes, p. 435, pl. xvii, figg. 2a & b; WOODWARD, Geol. Mag. vii, 1900.
- C. kraussi*, Gordon's Bay, Cape of Good Hope, p. 39, pls. 2 & 3; STEBBING, S. Afric. Crust. *C. grandidieri*, Madagascar, descr. and fig., p. 285; COUTIÈRE, Bull. Mus. Paris 1899, n. spp.
- +*C. rákosiensis*, p. 131, pl. ix, figg. 4a-4c, *brocchi*, p. 132, pl. ix, figg. 5a-5c, Tertiary, Hungary; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. spp.
- Callianasside*, key to W. African genera, p. 308; RATHBUN, P. U. S. Mus. xxii.
- Callinectes*, key to W. African spp., p. 290; RATHBUN, t. c. *C. diacanthus*, p. 71, pl. iv, fig. 5; EDWARDS & BOUVIER, Decap. Exped. Trav. *C. marginatus*, Angola, p. 41, pl. i, fig. 5; DE MAN, Mem. Soc. zool. France xiii. *C. marginatus*, colour of Brazilian specimens, p. 142; RATHBUN, P. Washington Ac. ii.
- Calocaris alcocki*, off N.E. Ceylon, p. 476; McARDLE, Ann. Nat. Hist. vi, n. sp.
- Camatopsis*, g. def., p. 328, *rubida*, p. 329; ALCOCK, J. Asiat. Soc. Bengal lxix.
- Cambarus gallinus*, Gallinas R., Las Vegas, New Mexico, p. 434; COCKERELL & PORTER, P. Ac. Philad. 1900, n. sp.
- Cancellus parvulus*, p. 183, pl. xxiii, figg. 20-30; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Cancer pagurus*, monstrosity, p. 80, pl. i; BOLAM, Hist. Berwick Club xvii: meristic variation in, p. 484; PATTERSON, Zoologist lviii.

- C. jordani*, Monterey Bay, p. 133; RATHBUN, Amer. Natural xxxiv, n. sp.  
 †*C. böckhii*, p. 74, pl. iv, fig. 5, *szontaghii*, p. 120, pl. viii, figg. 4a-d, Tertiary, Hungary; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. spp.  
*Carcinoplax*, g. defined, p. 301, *longimanus*, *longipes*, descr., p. 303; ALCOCK, J. Asiat. Soc. Bengal lxix. *C. subinteger*, alteration of specific name from *C. integer* de Man, p. 750, pl. xlv, fig. 9, var. *hirsutior* nov., Singapore, p. 751; LANCHESTER, P. Z. S. 1900.  
*Carcinus mænas*, occurrence in Port Phillip, Australia, p. 206; FULTON, Victorian Natural xvii.  
*Cardiosoma*, g. def., p. 444, *carnifex*, p. 445, *hirtipes*, p. 447; ALCOCK, J. Asiat. Soc. Bengal lxix.  
*Caridina modiglianii*, Kifa-juc, *atyoides*, Si Oban, p. 478; NOBILI, Ann. Mus. Genova xl, n. sp.  
 †*Carinocarcinus*, n. g. for *zittelii*, Tertiary, Hungary, p. 196, pl. i, figg. 1a-d, LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.  
 †*C. sp.*, p. 94, sp., p. 96, pl. v, figg. 5a & 5b, *spinosa*, p. 97, pl. v, fig. 6, Tertiary, Hungary; LÖRENTHEY, t. c., n. spp.  
*Carpilius corallinus*, p. 367; GUNDLACH, An. Ac. Habana xxxvi.  
*Carpilodes lophopus*, pl. xxxvi, fig. 2, *pediger*, pl. xxxvi, fig. 4, *cariosus*, pl. xxxvi, fig. 7; ALCOCK & ANDERSON, Illustr. Zool. Investigator.  
*C. pallidus*, Rotuma, descr., p. 586, pl. xl, fig. 3; BORRADAILE, P. Z. S. 1900. *C. socius*, Singapore, descr., p. 731, pl. xlv, fig. 4; LANCHESTER, P. Z. S. 1900, n. spp.  
*Catapaguroides microps*, p. 207, pl. xxiv, figg. 17-29, *megalops*, p. 210, pl. xxv, figg. 1-5, *acutifrons*, p. 212, pl. xxv, figg. 6-11; EDWARDS & BOUVIER, Decap. Exped. Trav.  
*Catapagurus muricatus*, pl. xxxi, figg. 3-3c; ALCOCK & ANDERSON, Illustr. Zool. Investigator.  
*Catoptrus*, g. defined, p. 307, *nitidus*, descr., p. 307; ALCOCK, J. Asiat. Soc. Bengal lxix.  
*Ceratoplax* g. def., p. 319, *ciliata*, p. 320; ALCOCK, t. c.  
*C. hispida*, Palk Sts., p. 321; ALCOCK, t. c. n. sp.  
*Charybdis rivers-andersoni*, pl. xlv, fig. 3, *investigatoris*, pl. xlv, fig. 4; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *C. merguensis*, Amboina, notes on ♂, p. 254; NOBILI, Ann. Mus. Genova xl.  
*Chasmocarcinops*, n. g. def. for *gelasimoides*, off Madras, p. 334; ALCOCK, J. Asiat. Soc. Bengal lxix, n. sp.  
*Chlorinoides longispinus*, pl. xxxiv, figg. 4-4b; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *C. aculeatus*, Singapore and Malacca, criticism of var. *armatus*, p. 724; LANCHESTER, P. Z. S. 1900.  
*C. waiteti*, N. S. Wales, p. 143, pl. xxxiii; WHITLEGGE, Mem. Austral. Mus. iv, n. sp.  
*Chlorodius americanus*, p. 371; GUNDLACH, An. Ac. Habana xxxvi.  
*C. barbatus*, Funafuti and Rotuma, descr., p. 587, pl. xli, fig. 4; BORRADAILE, P. Z. S. 1900, n. sp.  
*Chlorodopsis wood-masoni*, pl. xxxviii, fig. 7; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *C. pilumnoides*, possible distinction in colouring between the sexes, p. 737; LANCHESTER, P. Z. S. 1900.  
*Clibanarius*, key to W. African spp., p. 304; RATHBUN, P. U. S. Mus. xxii. *C. antillensis*, colour of Brazilian specimens, p. 144; RATHBUN, P. Washington Ac. ii. *C. strigimanus*, p. 167; WHITLEGGE, Mem. Austral. Mus. iv.  
*C. cooki*, Monrovia, ♂ descr., p. 305 and figg.; RATHBUN, P. U. S. Mus. xxii, n. sp.  
*Clistocaloma* g. def., p. 428, *balansa*, p. 429, *merguinse*, p. 429; ALCOCK. J. Asiat. Soc. Bengal lxix.  
*Clistostoma*, g. def., p. 372, *dotilliforme*, Karachi, p. 373; ALCOCK. 1900. [VOL. XXXVII.]



- +*Caloma vareolata*, Tertiary, Hungary, p. 206, pl. ii, figg. 5a-5e; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. sp.
- Crangon antarcticus*, notes, p. 1266; COUTIÈRE, C.R. Ac. Sci. cxxx: S. Georgia, p. 240; COUTIÈRE, Bull. Mus. Paris 1900.
- Crangonidae*, discussion of the family, p. 46, key to genera, p. 49; STEBBING, S. Afric. Crust.
- Cryptocnemus haddoni*, Mer, Torres Sts., p. 25, pl. i, figg. 4-8; CALMAN, Tr. Linn. Soc. viii, n. sp.
- +*Cyamocarcinus angustifrons*, Tertiary, Hungary, p. 69, pl. iii, figg. 2a-2d; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- Cyclodorippe plana*, N. America, p. 519; RATHBUN, Amer. Natural. xxxiv, n. sp.
- Cyclograpsus occidentalis*, p. 111, pl. xviii, figg. 1-5; EDWARDS & BOUVIER, Decap. Exped. Trav. *C. occidentalis*, Angola, p. 57; DE MAN, Mem. Soc. zool. France xiii.
- C. beccarii*, Dorei, p. 270; NOBILI, Ann. Mus. Genova xl, n. sp.
- Cycloxanthops denticulatus*, note on colour of Brazilian specimens, p. 138; RATHBUN, P. Washington Ac. ii.
- Cycloxanthus lineatus*, variation from M. Edwards' species, p. 735; LANCHESTER, P. Z. S. 1900.
- Cymo quadrilobatus*, pl. xxxviii, fig. 8; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Cyonomus granulatus*, p. 34, pl. xi, figg. 5-19; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Cyrtomaria goodridgei*, off W. Coast of Ceylon, p. 472; MCARDLE, Ann. Nat. Hist. vi, n. sp.
- Dehaanius* g. characterised, p. 18, *dentatus*, notes, p. 19; STEBBING, S. Afric. Crust.
- Dicranodromia mahyeuxi*, descr., p. 14, pls. iii, fig. 4, ix, figg. 1-11; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Diogenes*, key to W. African spp., p. 306; RATHBUN, P. U. S. Mus. xxii.
- Diptychus rubro-vittatus*, p. 356, pl. xxxii, figg. 6-14, *nitidus*, p. 360, pls. iv, fig. 4, xxxii, figg. 15-19; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Dorippe facchino*, Singapore and Malacca, commensal with anemones, p. 769; LANCHESTER, P. Z. S. 1900.
- Dorippida*, key to W. African genera, p. 299; RATHBUN, P. U. S. Mus. xxii.
- Dotilla*, g. def., p. 363, *intermedia*, p. 365, *brevitarsis*, p. 367, *myctiroides*, p. 368; ALCOCK, J. Asiat. Soc. Bengal lxix.
- D. affinis*, Aden, p. 365, *blanfordi*, Coast of Sind, p. 366, *clepsydrodactylus*, False Pt., p. 367; ALCOCK, t. c. n. spp.
- Dromia*, key to W. African spp., p. 300; RATHBUN, P. U. S. Mus. xxii. *D. vulgaris*, descr., p. 17, pl. ix, fig. 15, *nodosa*, p. 18, pl. ix, figg. 12-14; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Dromidiopsis*, n. g. defined for *Dromidia australiensis*, p. 572; BORRADAILE, P. Z. S. 1900.
- Dynamene filholi*, descr., p. 5, pls. iii, fig. 3, viii, figg. 1-18; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Ebalia*, key to W. African spp., p. 298; RATHBUN, P. U. S. Mus. xxii. *E. diadumena*, pl. xxix, fig. 4, *wood-masoni*, pl. xxix, fig. 5, *sagittifera*, pl. xxix, fig. 9; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *E. cranchi*, p. 41, pl. xii, fig. 1-3, *granulosa*, p. 42, pl. xii, fig. 4, *edwardsi*, p. 43, pl. xii, figg. 5-7, *algerica*, p. 44, pl. xii, figg. 8-14, *nux*, p. 45, pls. iii, fig. 7, xiii, figg. 1-5, *tuberosa*, p. 47, pl. xii, figg. 15-21, *atlantica*, p. 51, pl. xiii, figg. 6-10; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Echinophilus*, n. g. of *Pinnotheridae* for *mellita*, Pensacola, Florida, p. 590; RATHBUN, Amer. Natural. xxxiv, n. sp.

- Echinoplax pungens*, pl. xxxix; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Elamena*, g. def., p. 385, *truncata*, p. 386; ALCOCK, J. Asiat. Soc. Bengal lxi.
- E. sindensis*, Karachi, p. 386; ALCOCK, t. c. n. sp.
- Elasmonotus vaillanti*, p. 333, pl. xxxi, figg. 8-10; EDWARDS & BOUVIER, Decap. Exped. Trav.
- †*Enoplocyrtia minor*, Upper Cretaceous, B. C., p. 434; WOODWARD, Geol. Mag. vii, 1900, n. sp.
- Epigrapsus*, g. def., *politus*, p. 443; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Epinelus cessaci*, p. 76, pl. xv, figg. 1-8; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Epicanthus helleri*, p. 83, pl. xv, figg. 15-19; EDWARDS & BOUVIER, t. c.
- Ergasticus clovei*, p. 140, pl. xxi, figg. 1-7; EDWARDS & BOUVIER, t. c.
- Eriphia gonagra*, p. 372; GUNDLACH, An. Ac. Habana xxxvi: notes on colour of Brazilian specimens, p. 141; RATHBUN, P. Washington Ac. ii.
- †*Eryma dawsoni*, Upper Cretaceous, B. C., p. 400, pl. xvi, fig. 2; WOODWARD, Geol. Mag. vii, 1900, n. sp.
- Ethusa mascarone*, p. 22, *rugulosa*, p. 24, pl. 10, figg. 1-4, *rosacea*, p. 26, pls. 3, fig. 5, x, 5-8; EDWARDS & BOUVIER, Decap. Exped. Trav.
- E. hirsuta*, Indian Ocean, p. 474; MCARDLE, Ann. Nat. Hist. vi.
- Ethusina abyssicola*, p. 29, pl. i, fig. 6, *talismani*, p. 30, pls. iii, fig. 6, x, figg. 9 & 10; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Etisodes anaglyptus*, Singapore, redescr., p. 739, pl. xlv, fig. 5; LANCHESTER, P. Z. S. 1900.
- Eucrata crenata*, p. 300, var. *affinis*, p. 300, var. *dentata*, p. 301, *sexdentata*, p. 301; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Eumunida picta*, p. 364, pls. v, fig. 1, xxviii, fig. 26, xxxii, figg. 20-24; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Eupagurus pergranulatus*, pl. xxxi, fig. 1; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *E.*, discussion of g., p. 534, *comptus*, discussed, p. 535; STEBBING, P. Z. S. 1900. *E. pubescens*, Koleguev, notes, p. 4; STEBBING, Ann. Nat. Hist. v. *E. cuanensis*, p. 227, pl. xxviii, figg. 19 & 20, *excavatus*, p. 228, pl. xxvi, figg. 1-3, *variabilis*, p. 230, pl. xxvi, figg. 4-12, *irregularis*, pl. xxvi, figg. 13-21, *pulchellus*, p. 245, pls. xxvi, figg. 22-25, xxviii, figg. 15 & 16, *pubescentulus*, p. 248, pl. xxvi, figg. 26-30, xxviii, figg. 13 & 14, *carneus*, p. 252, pls. xxvi, figg. 6-10, xxviii, figg. 17 & 18, *ruber*, p. 258, pl. xxvii, figg. 1-5; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Eupanopeus africanus*, Angola, p. 35, pl. i, fig. 4; DE MAN, Mem. Soc. zool. France xiii.
- Eurynome aspera*, p. 125, pl. xix, figg. 7-15; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Eurypanopeus parvulus*, p. 99, pl. xvii, fig. 7; EDWARDS & BOUVIER, t. c.
- Eurypodius*, synonymy etc. of the genus, *latreillei*, discussion and descrip. of the sp., p. 527; STEBBING, P. Z. S. 1900. *E. latreillei*, Brasil, descr., p. 238; COUTIERE, Bull. Mus. Paris 1900.
- Euxanthus huonii*, bearing of specimen from Singapore on supposed identity of this sp. with *E. sculptilis*, p. 735; LANCHESTER, P. Z. S. 1900.
- Favus*, n. g. of *Brachyura*, defined, p. 767, *pergranulatus*, Singapore, p. 768, pl. xlvii, fig. 13; LANCHESTER, t. c. n. sp.
- Galacantha rostrata*, p. 308, pl. vi, fig. 9; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Galathea squamifera*, p. 276, pl. xxix, fig. 1, *dispersa*, p. 278, pl. 2 & 3, *rustipes*, p. 280, pl. xxix, figg. 4-8, *gracilis* EDWARDS & BOUVIER, t. c. *G. gr-*

- australiensis*, p. 189, *corallicola*, p. 190, *aculeata*, p. 190, sp., p. 191; WHITLEGGE, Mem. Austral. Mus. iv.
- Galathodes tridentata*, p. 331, pl. xxxi, figg. 5-7; EDWARDS & BOUVIER, Decap. Exped. Trav.
- +*Galenopsis similis*, Tertiary, Hungary, p. 82, pl. v, figg. 1-26; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- +*G. quadrilobata*, p. 85, pl. v, figg. 3a-3c, Tertiary, Hungary; LÖRENTHEY, t. c. n. sp.
- Gecarcinidae*, key to W. African genera, p. 276; RATHBUN, P. U. S. Mus. xxii.
- Gelasimus*, g. def., p. 350, *annulipes*, p. 353, *lacteus*, p. 355, *inversus*, p. 355, var. *sindensis*, nov. *triangularis*, p. 356, *tetragonum*, p. 357, *marionis*, p. 359, var. *nitidus*, *acutus*, p. 360, *dussumieri*, p. 361, *urvillei*, p. 363; ALCOCK, J. Asiat. Soc. Bengal lxix.
- Geograpsus*, g. def., p. 394, *grayi*, p. 395, *crinipes*, p. 396; ALCOCK, t. c. *G. lividus*, Angola, p. 50; DE MAN, Mem. Soc. zool. France xiii.
- Geryon longipes*, p. 103, pls. ii, xvii, figg. 13-21; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Glaucothoe peroni*, p. 260, pl. xxvi, figg. 11-17; EDWARDS & BOUVIER, t. c. *G. hexagonata*, N. S. Wales, p. 177, figg. 12 & 12a, *carinata*, notes on ♂ specimen from N. S. Wales, p. 179; WHITLEGGE, Mem. Austral. Mus. iv.
- Glypturus branneri*, Brazil, ♀ descr., p. 150, pl. viii, figg. 5-8; RATHBUN, P. Washington Ac. ii, n. sp.
- Goniocaphyrina*, n. sub. fam. of *Portunidae* for *Goniocaphyra truncatifrons* de Man, p. 577; BORRADAILE, P. Z. S. 1900.
- Goniopetunus subornatus*, p. 156; WHITLEGGE, Mem. Austral. Mus. iv.
- Goniosoma roseum*, note on ♂, p. 254, pl. xii, fig. 1; LANCHESTER, Ann. Nat. Hist. vi.
- Grapsidae*, key to W. African genera, p. 277; RATHBUN, P. U. S. Mus. xxii.
- Grapsodes*, g. def., p. 441, *notatus*, p. 442; ALCOCK, J. Asiat. Soc. Bengal lxix.
- Grapsus*, g. def., p. 390, *grapsus*, p. 392, *strigosus*, p. 393; ALCOCK, t. c. *G. simplex*, Angola, p. 43, pl. ii, figg. 6 & 7; DE MAN, Mem. Soc. zool. France xiii.
- G. kingsleyi*, Angola, p. 46, pl. ii, fig. 8; DE MAN, t. c. n. sp.
- Halicarcarinus*, discussion of the genus, p. 521, *planatus*, redescribed and compared with *ovatus*, p. 524, pl. xxxvi B, *ovatus*, pl. xxxvi A; STEBBING, P. Z. S. 1900.
- Haliporus taprobanensis*, pl. xli, fig. 3; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Hapalocarcinus marsupialis*, ♀ descr. and many notes, p. 43, pl. iii, figg. 29-40; CALMAN, Tr. Linn. Soc. viii.
- +*Harpactocarcinus punctulatus*, Tertiary, Hungary, p. 99, pl. vii, figg. 1a & 1b; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- Harrovia albolineata*, var. *longipes*, nov., Singapore, described, p. 729, pl. xlv, fig. 3, *tuberculata*, variation in tubercles of the arm etc., p. 729; LANCHESTER, P. Z. S. 1900.
- Hephthopelta*, g. def. *lugubris*, p. 327; ALCOCK, J. Asiat. Soc. Bengal lxix.
- Herbstia rubra*, p. 128, pl. xix, fig. 16; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Heterocarpus laevigatus*, pl. xlii, figg. 1 & 1a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- H. grimaldii*, between Pico & São Jorge, p. 58; EDWARDS & BOUVIER, Bull. Soc. zool. France xxv, n. sp.
- Heterocrypta maltzani*, p. 121, pl. xix, fig. 6, var. *marioni*, p. 122, pls. xviii, fig. 16, xix, figg. 1-5; EDWARDS & BOUVIER, Decap. Exped. Trav.

- Heteronucia vesiculosa*, pl. xxviii, fig. 6; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Hippolysmata rhizophora*, Brazil, ♀ descr., p. 153, pl. viii, fig. 9; RATHBUN, P. Washington Ac. ii, n. sp.
- Homola andamanica*, pl. xl, fig. 1; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *H. orientalis*, notes, p. 163; WHITLEGGE, Mem. Austral. Mus. iv.
- Homologenus rostratus*, descr., p. 11, pls. i, fig. 3, viii, figg. 19-21; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Hoplophrys oatesii*, pl. xxxiv, figg. 1-2a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- †*Hoploplaria westoni*, p. 433, pl. xvii, figg. 1a-c, *bennetti*, p. 433, Upper Cretaceous, B.C.; WOODWARD, Geol. Mag. vii, 1900, n. spp.
- Hoploxanthus heathi*, pl. xxxvii, figg. 1 & 1a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Hyastenus tenuicornis*, pl. xxxiii, figg. 4 & 4a; ALCOCK & ANDERSON, t. c. *H. elegans*, differences from type in Rotuma specimens, p. 574, pl. xl, fig. 2; BORRADAILE, P. Z. S. 1900. *H. verrucosipes*, Notes, p. 36, pl. ii, figg. 23 & 24; CALMAN, Tr. Linn. Soc. viii. *H. diacanthus*, var. *bituberculatus*, nov., Singapore and Malacca, described, p. 723; LANCHESTER, P. Zool. Soc. London 1900.
- H.*, sp., Beagle Bay, p. 252; NOBILI, Ann. Mus. Genova xl, n. sp. ?
- Hymenicus*, g. def., p. 387, *wood-masoni*, Andamans, p. 386, *inachoides*, p. 388; ALCOCK, J. Asiat. Soc. Bengal lxix, n. spp.
- Hymenosomidae*, discussion of the Family, p. 521; STEBBING, P. Z. S. 1900.
- Inachida*, notes on the family, p. 526; STEBBING, t. c. 1900.
- Inachus*, g. discussed and some spp. described, p. 296; GUNDLACH, An. Ac. Habana xxxvi.
- Jousseauinea ortmanni*, American Coast, p. 356; COUTIERE, C.R. Ac. Sci. cxxxi, n. sp.
- Lambdophallus*, g. def., p. 329, *serpes*, Bay of Bengal, p. 330; ALCOCK, J. Asiat. Soc. Bengal lxix, n. sp.
- Lambrus crenulatus*, descr., p. 301; GUNDLACH, An. Ac. Habana xxxvi. *L.*, key to W. African spp., p. 295; RATHBUN, P. U. S. Mus. xxii. *L. nierni*, p. 115, pl. xviii, figg. 6 & 7; EDWARDS & BOUVIER, Decap. Exped. Trav.
- L. confragosus*, Torres Sta., p. 42, pl. iii, figg. 27 & 28; CALMAN, Tr. Linn. Soc. viii. *L. tumidus*, Malacca, described, p. 727, pl. xlv, fig. 2; LANCHESTER, P. Z. S. 1900 : n. spp.
- Leander*, g. defined, p. 336, *concinus*, p. 337, pl. xiv, figg. 47 & 47a; COUTIERE, Ann. Sci. Nat. xii.
- Leptodius euglyptus*, pl. xxxvi, fig. 1; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *L. convexus*, p. 97, pl. xvii, figg. 1-6; EDWARDS & BOUVIER, Decap. Exped. Trav. *L. punctatus*, Angola, p. 31, pl. i, fig. 1; DE MAN, Mem. Soc. zool. France xiii.
- Leptopodia*, g. discussed and some spp. descr., p. 296; GUNDLACH, An. Ac. Habana xxxvi.
- Leucosia sima*, pl. xxx, fig. 1, *corallicola*, pl. xxx, fig. 2, *truncata*, pl. xxx, fig. 3; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Leucosidae*, key to W. African genera, p. 298; RATHBUN, P. U. S. Mus. xxii.
- Libinia distincta*, descr., p. 303; GUNDLACH, An. Ac. Habana xxxvi.
- Libystes*, g. defined, p. 304, *edwardsi*, Persian Gulf, *alphonsi*, Andamans, p. 306; ALCOCK, J. Asiat. Soc. Bengal lxix, n. spp.
- †*Linupares vancouverensis*, p. 395, pl. xv, *canadensis*, p. 396, pl. xvi, fig. 1; WOODWARD, Geol. Mag. vii, 1900.
- Liocarcinus*, key to W. African spp., p. 292; RATHBUN - -
- Liolophus*, g. def., p. 439, *planissimus* -  
Bengal lxix.



- Liomera sodalis*, pl. xxxvi, fig. 5; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *L. cinctimana*, notes, p. 4; CALMAN, Tr. Linn. Soc. viii.
- Lioxantho tumidus*, pl. xxxvi, fig. 3, *asperatus*, pl. xxxvi, fig. 9; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Lispognathus thomsoni*, p. 148, pls. iii, fig. 8, xxi, figg. 8-14; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Litochira*, g. def., p. 313, *integra*, p. 314, *setosa*, p. 315, *quadrispinosa*, p. 316; ALCOCK, J. Asiat. Soc. Bengal lxix.
- L. angustifrons*, Bombay, *beaumontii*, Andamans, p. 315; ALCOCK, t. c. n. spp.
- Lithodes ferox*, p. 264, pl. vi, figg. 3-6, *tropicalis*, p. 266, pls. vii, fig. 1, xxvii, figg. 18-20; EDWARDS & BOUVIER, Decap. Exped. Trav.
- +*Lobocarcinus paulino-eurtemburgensis*, Tertiary, Hungary, p. 62, pl. iii, figg. 1a-1c; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- Lophactea corallina*, pl. xxxvi, fig. 6; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *L. picta*, p. 101, pls. i, figg. 7-11, xvii, figg. 8-12; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Lophopanopeus heathii*, Monterey Bay, *diegensis*, San Diego, *lockingtoni*, San Diego Bay; RATHBUN, Amer. Natural. xxxiv, n. spp.
- Lophozozymus epheliticus*, variations in specimens from Singapore, p. 736, *leucomanus*, distinction from *L. bellus*, p. 736; LANCHESTER, P. Z. S. 1900.
- Lupa dicantha*, p. 54, *biocellata*, p. 57, *forceps*, p. 59, *cribaria*, p. 64; GUNDLACH, An. Ac. Habana xxxvii.
- Lupocyclus strigosus*, pl. xlvi, figg. 1 & 1a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Macrophthalmus*, g. def., p. 375, *verreauxi*, *pectinipes*, p. 377, *convexus*, p. 378, *sulcatus*, p. 379, *depressus*, p. 380, *erato*, p. 381, *tomentosus*, p. 382; ALCOCK, J. Asiat. Soc. Bengal lxix. *M. depressus*, Buntal, p. 259, notes on a ♂; LANCHESTER, Ann. Nat. Hist. vi. *M. dilatatus*, var. *carens*, nov., described, p. 759, pl. xlvii, fig. 11; LANCHESTER, P. Z. S. 1900.
- Maia spinigera*, pl. xxxiv, figg. 3 & 3a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Maïde*, key to W. African genera, p. 293; RATHBUN, P. U. S. Mus. xxii.
- Matuta victor*, p. 250, *banksii*, p. 250, notes on distribution, etc.; NOBILI, Ann. Mus. Genova xl.
- Melia castifer*, pl. xxxviii, fig. 4, *pugil*, pl. xxxviii, fig. 5; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Menippe nanus*, p. 80, pl. xv, figg. 9 & 10; EDWARDS & BOUVIER, Decap. Exped. Trav. *M. ocellata*, p. 368; GUNDLACH, An. Ac. Habana xxxvi.
- Merocryptus obsoletus*, p. 56, pl. xiii, figg. 11-13; EDWARDS & BOUVIER, Decap. Exped. Trav.
- +*Mesodromilites*, n. g. for *birleyi*, Gault, Folkestone, p. 61; WOODWARD, Geol. Mag. vii, n. sp.
- Metaplas*, g. def., p. 430, *indica*, *distincta*, p. 432, *dentipes*, p. 433, *elegans*, p. 434, *intermedia*, *crenulata*, p. 435; ALCOCK, J. Asiat. Soc. Bengal lxix.
- Metasesarma*, g. def., *rousseauvii*, p. 427; ALCOCK, t. c.
- Metopograpsus*, g. def., p. 396, *messor*, p. 397, *maculatus*, p. 398; ALCOCK, t. c. *M. oceanicus*, Amboina, p. 265; NOBILI, Ann. Mus. Genova xl.
- +*Meyeria harveyi*, Upper Cretaceous, B. C., p. 434; WOODWARD, Geol. Mag. vii, n. sp.
- Micippe margaritifera*, pl. xxxv, figg. 3 & 3a, var. *parca*, pl. xxxv, figg. 4 & 4a; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *M. cristata*, Malay Archipelago, notes, p. 252; NOBILI, Ann. Mus. Genova xl.

- M. excavata*, Singapore, described, p. 725, pl. xlv, fig. 1; LANCHESTER, P. Z. S. 1900, n. sp.
- †*Micromaja tuberculata*, Tertiary, Hungary, p. 41, pl. ii, figg. 2 & 3; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- Micropisa*, key to W. African spp., p. 294; RATHBUN, P. U. S. Mus. xxii.
- M. ovata*, p. 130, pl. xviii, fig. 18; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Mictyris*, g. def., p. 383, *longicarpus*, p. 384; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Minyocerus angustus*, Brazil, descr., p. 149; RATHBUN, P. Washington Ac. ii.
- Mithrax spinosissimus*, descr., p. 305, *aculeatus*, p. 328, *hispidus*, p. 329, *sculptus*, p. 330; GUNDLACH, An. Ac. Habana xxxvi. *M. brasiliensis*, colour of Brazilian specimens, p. 143; RATHBUN, P. Washington Ac. ii.
- Munida comorina*, pl. xliii, fig. 3; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *M. tropicalis*, p. 286, pl. xxix, figg. 9-11, *curvimana*, p. 287, pl. xxix, figg. 12-16, *sancti-pauli*, p. 293, pls. vi, fig. 8, xxix, figg. 18 & 19, *bambfica*, p. 299, pl. xxix, fig. 17, *perarmata*, p. 307, pl. xxx, fig. 1; EDWARDS & BOUVIER, Decap. Exped. Trav. *M. haswelli*, notes on N. S. Wales specimen, p. 193; WHITLEGGE, Mem. Austral. Mus. iv.
- Munidopsis moresbyi*, pl. xl, fig. 3, *rosacea*, pl. xl, fig. 4, *iridis*, pl. xlv, figg. 1-1b, *goodrigii*, pl. xlv, fig. 2; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *M. acuta*, p. 312, pl. xxx, figg. 2-5, *longirostris*, pl. iv, fig. 4, xxx, figg. 6-10, *talismani*, p. 316, pl. xxx, figg. 11-15, *abyssorum*, p. 319, figg. 16-20, *antonii*, p. 321, pls. iv, fig. 2, xxx, figg. 21-25, *media*, p. 325, pl. xxx, fig. 25, *aculeata*, p. 327, pl. xxxi, figg. 1-4; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Murnia aspera*, pl. xl, fig. 2; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *M. cristimanus*, notes, p. 22; STEBBING, S. Afric. Crust.
- Myra brevimana*, pl. xxix, figg. 8-8a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Nautilocorystes*, g. discussed, *octodentatus* descr., p. 17; STEBBING, S. Afric. Crust.
- Naxia cerastes*, pl. xxxiii, figg. 2 & 2a, *taurus*, pl. xxxiii, figg. 5 & 5a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Nectopanope rhodobaphes*, pl. xxxviii, fig. 6; ALCOCK & ANDERSON, t. c.
- Nematopagurus longicornis*, p. 201, pl. xxiv, figg. 10-16; EDWARDS & BOUVIER, Decap. Exped. Trav.
- †*Neptunocarcinus millenaris*, Tertiary, Hungary, p. 77, pl. iv, figg. 3 & 4; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. sp.
- Neptunus petreus*, pl. xlv, fig. 2; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *N. vocans*, p. 68, pl. xiv, figg. 6-9; EDWARDS & BOUVIER, Decap. Exped. Trav. *N. hastatoides*, Singapore, sexual differences, p. 745, pl. xlv, fig. 7; LANCHESTER, P. Z. S. 1900. *N. pelagicus*, notes on variation of N. S. Wales specimens, p. 154; WHITLEGGE, Mem. Austral. Mus. iv. †*N. granulatus*, p. 118, pl. ix, figg. 2a-3, Tertiary, Hungary; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- †*N. hungaricus*, Tertiary, Hungary, p. 20, pl. i, figg. 1a-c; LÖRENTHEY, t. c., n. sp.
- Notonyx*, g. def., p. 318, *nitidus*, p. 319; ALCOCK, J. Asiat. Soc. Bengal lxi.
- N. vitreus*, Andaman Sea, p. 319; ALCOCK, t. c. n. sp.
- Nursia persica*, pl. xxix, fig. 1, *nasuta*, pl. xxix, fig. 2, *blanfordi*, pl. r, fig. 3; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Ocypode*, key to W. African spp., p. 9

- O.*, g. def., p. 343, *ceratophthalma*, p. 345, *macrocera*, p. 347, *platytarsis*, *rotundata*, p. 348, *cordimana*, p. 349; ALCOCK, J. Asiat. Soc. Bengal lxix. *O. ceratophthalma*, notes on hairs on the eyestalk, etc., p. 751; LANCHESTER, P. Z. S. 1900. *O. ippeus*, Angola, p. 42; DE MAN, Mem. Soc. zool. France xiii.
- Ocypodidae*, key to W. African genera, p. 274; RATHBUN, P. U. S. Mus. xxii.
- Orophorhynchus parviti*, p. 336, pls. iii, fig. 1, xxxi, figg. 11-13, *marionis*, p. 340, pl. xxxi, figg. 14-16, *lividus*, p. 343, pls. iv, fig. 3, xxxi, figg. 17-22; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Orphoxanthus microps*, pl. xxxvi, fig. 8; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Pachycheles monilifer*, note on colour of Brazilian specimens, p. 148; RATHBUN, P. Washington Ac. ii.
- Pachygrapsus*, g. def., *minutus*, p. 399; ALCOCK, J. Asiat. Soc. Bengal lxix. *P. transversus*, Angola, p. 52, pl. ii, fig. 9, *maurus*, Angola, p. 54, pl. ii, fig. 10; DE MAN, Mem. Soc. zool. France xiii.
- P. levis*, Funafuti, ♀ descr., p. 592, pl. xlii, fig. 7; BORRADAILE, P. Z. S. 1900, n. sp.
- Paguridae*, key to W. African genera, p. 301; RATHBUN, P. U. S. Mus. xxii.
- Paguristes pusillus*, pl. xxxi, fig. 4 & 4a, *punicus*, pl. xxxii, fig. 1; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *P. oculatus* var. *brunneopictus* nov., p. 165, pl. vi, fig. 1, *maroccanus*, p. 167, pl. xxxiii, figg. 1-6, *hispidus*, p. 170, pl. xxxiii, figg. 7-10; EDWARDS & BOUVIER, Decap. Exped. Trav.
- P. tuberculatus*, N. S. Wales, p. 169, figg. 11 & 11a; WHITLEGGE, Mem. Austral. Mus. iv, n. sp.
- Pagurus*, key to W. African spp., p. 303; RATHBUN, P. U. S. Mus. xxii. *P. calidus*, p. 180, pls. xxiii, fig. 19, xxviii, fig. 21; EDWARDS & BOUVIER, Decap. Exped. Trav.
- P. striatus*, measurements and colour, p. 166; WHITLEGGE, Mem. Austral. Mus. iv.
- †*P. priacus*, Tertiary, Hungary, p. 134, pl. ix, figg. 6a-7b; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- †*Palaeastacus ornatus*, p. 399; WOODWARD, Geol. Mag. vii, 1900.
- Palæmon multidentis*, Madagascar, p. 23, *maria*, Madagascar, p. 24; COUTIÈRE, Bull. Mus. Paris 1900. *P. ustulatus*, Rigo, p. 241, *acanthosoma*, Katau, p. 242, *singalensis*, Aier Mantoior, p. 487; NOBILI, Ann. Mus. Genova xl. *P. wolterstorffi*, Java, p. 1; NOBILI, Boll. Mus. Torino xv, No. 379. *P. brachylabis*, Brazil, ♀ descr., p. 154, pl. viii, fig. 10; RATHBUN, P. Washington Ac. ii, n. spp.
- P.*, key to W. African spp., p. 314, RATHBUN, P. U. S. Mus. xxii. *P.*, g. discussed and classified, p. 249; *P. lepidactylus*, p. 272, pls. x & xi, figg. 1-13a, *hilgendorfi*, p. 281, pl. xi, figg. 14-17, *dolichodactylus*, p. 283, pl. xi, figg. 18 & 19, *patsa*, p. 284, pl. xi, figg. 20-22, *rudis*, p. 288, pl. xii, figg. 23 & 24, *lar*, p. 292, pl. xii, figg. 25-28, *ide*, p. 303, pl. xii, figg. 29-30a, *ritsema*, p. 314, pl. xiii, figg. 32-33a, *superbus*, p. 319, pl. xiii, figg. 34-37, *danae*, p. 325, pl. xiii, figg. 38 & 39, *multidentis*, p. 327, pl. xiv, figg. 40 & 40a, *dispar*, p. 329, pl. xiv, figg. 41-43a, *sundaicus*, p. 332, pl. xiv, figg. 44-46a; COUTIÈRE, Ann. Sci. nat. xii. *P. rosenbergi*, New Guinea, ♂ descr., p. 236, *ide*, var. *subinermis*, nov., Fiume, p. 237, *sundaicus*, var. *brachydactyla*, nov., Amboina, p. 238, var. *de Mani*, nom. nov. for *P. sundaicus* Hell. var. de Man, p. 239, *lar*, distribution, p. 240, *vagus*, Amboina, p. 240, descr. and notes, *latimanus*, descr., p. 484; NOBILI, Ann. Mus. Genova xl.
- Palæmonidae*, key to W. African genera, p. 314; RATHBUN, P. U. S. Mus. xxii.

- †*Palaeocarpilius klipsteinii*, Tertiary, Hungary, p. 204, pl. ii, figg. 4a-4d; LÖRENTHEY, Math. tern. Kozlem. Magyar Ak. xxvii.
- †*Palaeograpsus löczyanus*, Tertiary, Hungary, p. 88, pl. iv, figg. 6a-6f; LÖRENTHEY, t. c., n. sp.
- Palicus*, g. def., p. 450, *jukesii*, p. 451, *whitei*, p. 453, *serripes*, p. 454; ALCOCK, J. Asiat. Soc. Bengal lxi. *P. caroni*, p. 21, pls. i, figg. 3-5, x, fig. 11, xi, figg. 1-4; EDWARDS & BOUVIER, Decap. Exped. Trav. *P. jukesii*, ♂ descr., p. 29, pl. i, figg. 9-13, *whitei*, descr., p. 31, pl. ii, figg. 14-19, *serripes*, descr., p. 32, pl. ii, figg. 20-22; CALMAN, Tr. Linn. Soc. viii.
- P. wood-masoni*, Andamans, p. 454, *investigatoris*, Andamans, p. 455; ALCOCK, t. c. n. spp.
- Palinuridae*, key to W. African genera, p. 310; RATHBUN, P. U. S. Mus. xxii.
- Palinurus*, history etc. of the g., p. 30; STEBBING, S. Afric. Crust.
- P. gilchristi*, False Bay, S. Africa, p. 31, pl. i; STEBBING, t. c. n. sp.
- Panopeus herbstii*, p. 370; GUNDLACH, An. Ac. Habana xxxvi.
- Panulirus*, key to W. African spp., p. 310; RATHBUN, P. U. S. Mus. xxii.
- P. echinatus*, Brazil, descr., p. 151; RATHBUN, P. Washington Ac. ii.
- P. orientalis*, Japan, p. 130; DOFLEIN, SB. Ak. Munchen xxx, n. sp.
- Paralomis investigatoris*, pl. xliii, fig. 1, *indica*, pl. xliii, fig. 2; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *P.*, history of g., p. 531, *granulosa*, notes, p. 532; STEBBING, P. Z. S. 1900.
- Paramicippa grandis*, Perseverance Harbour, p. 423; HECTOR, Tr. N. Zealand Inst. xxii, n. sp.
- Paramithrax tuberculatus*, N. S. Wales, p. 146, pl. xxxiv, figg. 1 & 2; WHITLEGGE, Mem. Austral. Mus. iv, n. sp.
- Paranephrops planifrons*, p. 14, *zealandicus*, p. 15, *setosus*, p. 16, notes; CHILTON, Tr. N. Zealand Inst. xxxii.
- Parapagurus andersoni*, pl. xxxii, fig. 2, *minutus*, pl. xxxii, figg. 3 & 3a; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *P.*, g. diagnosed, p. 27, *dimorphus*, descr., p. 28; STEBBING, S. Afric. Crust. *P. pilosimanus*, p. 187, pls. vi, fig. 2, xxiv, figg. 1-3, var. *abyssorum*, p. 191, pl. xxiv, figg. 4-6; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Parupeneus investigatoris*, pl. xli, figg. 1-1b; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Pariphiculus rostratus*, pl. xxx, fig. 7; ALCOCK & ANDERSON, t. c.
- Parathelphusa*, key to West African spp., p. 284; RATHBUN, P. U. S. Mus. xxii.
- Parthenolambrus expansus*, p. 117, pl. xviii, figg. 8-11; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Parthenope bouvieri*, p. 119, pl. xviii, figg. 12-15; EDWARDS & BOUVIER, t. c.
- Parthenopidae*, key to W. African genera, p. 295; RATHBUN, P. U. S. Mus. xxii.
- Pelocarcinus*, g. def., p. 448, *humei*, p. 449; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Penaeidae*, key to W. African genera, p. 310; RATHBUN, P. U. S. Mus. xxii.
- Penaeus*, key to W. African spp., p. 310; RATHBUN, t. c.
- Pericera cornuta*, p. 362, *bicornuta*, p. 363, *trispinosa*, p. 365, *septemspinosa*, p. 366; GUNDLACH, An. Ac. Habana xxxvi.
- Petrochirus*, key to W. African spp., p. 302; RATHBUN, P. U. S. Mus. xxii.
- P. insignis*, colour of Brazilian specimens, p. 144; RATHBUN, P. Washington Ac. ii.
- Petrolisthes leporinus*, Angola, p. 60, pl. ii, fig. 12; DE MAN, Mem. Soc. zool. France xiii. *P. serratus*, notes, *armatus*, *scarpinatus*, colour of Brazilian specimens, p. 145; RATHBUN, P. Washington Ac. ii.
- †*Phyltenodes hautkenii*, p. 58, pl. ii, figg. 10a-10c, *krenneri*, p. 60



- figg. 9a-c, Tertiary, Hungary; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. spp.
- Philyra*, key to W. African spp., p. 298; RATHBUN, P. U. S. Mus. xxii.
- P. sexangula*, pl. xxix, figg. 6 & 6a, *corallicola*, pl. xxix, figg. 7 & 7a; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *P. globosa*, Malacca, described, p. 764, *sexangula*, Singapore, ♀ descr., p. 765; LANCHESTER, P. Z. S. 1900. *P. laeviodorsalis*, p. 58, pl. xiii, figg. 14-15; EDWARDS & BOUVIER, Decap. Exped. Trav.
- +*Phymatocarcinus eocenicus*, Tertiary, Hungary, p. 51, pls. ii, figg. 4-8, vi, fig. 3; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. sp.
- +*Pilodius mediterraneus*, p. 126, pl. viii, figg. 5 & 6, Tertiary, Hungary; LÖRENTHEY, t. c. n. sp.
- Pilumnoplax*, g. def., *americana*, p. 311; ALCOCK, J. Asiat. Soc. Bengal lxix.
- Pilumnus hirtellus*, var. *inermis*, p. 73, pl. xiv, fig. 18, *perrieri*, p. 73, pl. xiv, figg. 10-18; EDWARDS & BOUVIER, Decap. Exped. Trav. *P. longicornis*, notes, p. 16; CALMAN, Tr. Linn. Soc. viii. *P. andrewsii*, differences from type specimen, p. 139; RATHBUN, P. Washington Ac. ii. *P. tomentosus*, N. S. Wales, p. 149; WHITLEGGE, Mem. Austral. Mus. iv.
- P. rotumanus*, Rotuma, ♀ descr., p. 581, pl. xli, fig. 6; BORRADAILE, P. Z. S. 1900. *P. cristipes*, Mabuiag, p. 17, pl. i, figg. 1-3; CALMAN, Tr. Linn. Soc. viii. *P. australis*, N. S. Wales, p. 152, pl. xxxv, figg. 1-4; WHITLEGGE, Mem. Austral. Mus. iv, n. spp.
- Pilumnidae*, key to W. African genera, p. 285; RATHBUN, P. U. S. Mus. xxii.
- Pinnixa cristata*, Beaufort, N.C., p. 589; RATHBUN, Amer. Natural. xxxiv, n. sp.
- Pinnoteres*, g. def., p. 337, *edwardsi*, p. 338, *parvulus*, p. 339, *abyssicola*, p. 340; ALCOCK, J. Asiat. Soc. Bengal lxix.
- P. purpureus*, Andaman Is., *mastricola*, Mouth of the R. Hooghly, p. 339; ALCOCK, t. c. n. spp.
- Pirosoma riisei*, descr. and colour of Brazilian specimens, p. 146; RATHBUN, P. Washington Ac. ii.
- P. greeleyi*, Brazil, descr., p. 147, pl. viii, fig. 4; RATHBUN, t. c. n. sp.
- Plagusia*, key to W. African spp., p. 281; RATHBUN, P. U. S. Mus. xxii.
- P.*, g. def., p. 436, *depressa*, var. *squamosa*, p. 437; ALCOCK, J. Asiat. Soc. Bengal lxix. *P. depressa*, note on colour of specimens from Brazil, p. 138; RATHBUN, P. Washington Ac. ii.
- Platybema pristis*, Beagle Bay, p. 233; NOBILI, Ann. Mus. Genova xl, n. sp.
- Platypilumnus* differences from *Pilumnoplax*, p. 313; ALCOCK, J. Asiat. Soc. Bengal lxix.
- Podophthalmus nacreus*, pl. xlviii, fig. 4; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Polyonyx bouvieri*, parasitic in *Loimia medusa*, Senegal, p. 231, pls. i, figg. 15-18, ii, figg. 19-41; SAINT-JOSEPH, Ann. Sci. nat. xii, n. sp.
- Pontocaris media*, pl. xli, figg. 6 & 6a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Porcellana*, key to W. African spp., p. 308; RATHBUN, P. U. S. Mus. xxii.
- P. rosea*, Brazil, descr., p. 148, pl. viii, fig. 3; RATHBUN, P. Washington Ac. ii, n. sp.
- Porcellanidae*, key to W. African genera, p. 308; RATHBUN, P. U. S. Mus. xxii.
- Porcellano-pagurus tridentatus*, N. S. Wales, p. 181, figg. 13-13b; WHITLEGGE, Mem. Austral. Mus. iv, n. sp.
- Portunidae*, table of characters of subfamilies, p. 576; BORRADAILE, P. Z. S. 1900; Key to W. African genera, p. 289; RATHBUN, P. U. S. Mus. xxii.

- Portunus ruber*, p. 60, *spinimanus*, p. 62, *aurimanus*, p. 63; GUNDLACH, An. Ac. Habana xxxvii. *P.*, key to W. African spp., p. 289; RATHBUN, P. U. S. Mus. xxii. *P. biguttatus*, p. 61, pl. xiv, figg. 1-5; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Potamocarcinus principessa*, Bogota, p. 121; DOFLEIN, SB. Ak. Munchen xxx, n. sp.
- Potamon*, key to W. African spp., p. 282; RATHBUN, P. U. S. Mus. xxii. *P. tridentatum*, var. *incertum*, nov., Singapore, descr., p. 749, pl. xlv, fig. 10; LANCHESTER, P. Z. S. 1900; note on ♂, p. 255, pl. xii, fig. 2; LANCHESTER, Ann. Nat. Hist. vi. *P. kadamaianum*, N. Borneo, ♀ descr., p. 94; BORRADAILE, P. Z. S. 1900. *P. bidiense*, Bidi, Malaysia, p. 256, pl. xii, fig. 3; LANCHESTER, Ann. Nat. Hist. vi. *P. doriae*, Sarawak, p. 501, *gestroi*, Mt. Singalang, p. 502, *loriae*, Haveri, p. 261; NOBILI, Ann. Mus. Genova xl, n. sp.
- Potamonidea*, key to genera in W. Africa, p. 282; RATHBUN, P. U. S. Mus. xxii.
- Pseudodromia*, notes on the g., p. 23, *latens*, descr., p. 24; STEBBING, S. Afric. Crust.
- Pseudomicippa varians*, notes, p. 39, pl. ii, figg. 25 & 26; CALMAN, Tr. Linn. Soc. viii.
- Pseudophylira wood-masoni*, pl. xxx, figg. 6 & 6a, *blanfordi*, pl. xxx, figg. 8 & 8a; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *P. melita*, possible sexual differences, p. 765; LANCHESTER, P. Z. S. 1900.
- Pseudozium dispar*, notes, p. 14; CALMAN, Tr. Linn. Soc. viii. *P. bouvieri*, p. 82, pl. xv, figg. 11-14; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Psilocranium gigas*, capture of a specimen weighing 30 lbs.; MORTON, Nature lxii.
- Psopheticus*, g. defined, p. 308, *stridulans*, descr., p. 309; ALCOCK, J. Asiat. Soc. Bengal lxix.
- P. insignis*, gulf of Martaban, p. 310; ALCOCK, t. c. n. sp.
- Ptenoplax*, synonymy, p. 455; ALCOCK, t. c.
- Ptychogaster investigatoris*, pl. xlv, fig. 1, *hendersoni*, pl. xlv, fig. 2; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *P. formosus*, p. 350, pls. iii, fig. 2, xxxii, figg. 1-5; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Ptychognathus*, g. def., p. 402, *dentata*, p. 403, *pusilla*, p. 405, *barbata*, p. 407; ALCOCK, J. Asiat. Soc. Bengal lxix. *P. riedelii*, Celebes, notes, p. 266; NOBILI, Ann. Mus. Genova xl.
- P. onyx*, Tavoy, p. 404, *andamica*, N. Andaman Is., p. 404; ALCOCK, t. c. n. sp.
- P. pictum papuanum*, Katau, p. 263; NOBILI, Ann. Mus. Genova xl, n. subsp.
- Pugettia mosaica*, N. S. Wales, p. 141, pls. xxxv, figg. 5-7; WHITLEGGE, Mem. Austral. Mus. iv, n. sp.
- Pylocheles miersi*, pl. xliii, figg. 4-4b; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Pylopagurus magnimanus*, pl. xxxi, fig. 2; ALCOCK & ANDERSON, t. c.
- Pyxidognathus*, g. def., *deianira*, p. 407; ALCOCK, J. Asiat. Soc. Bengal lxix.
- P. fluviatilis*, R. Ichamutty, India, p. 408; ALCOCK, t. c. n. sp.
- Quadrella boopsis*, pl. xxxviii, fig. 1, *coronata*, var. *maculosa*, pl. xxxviii, fig. 2; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Randallia eburnea*, pl. xxx, fig. 4, *lanata*, pl. xxx, figg. 5 & 5a; ALCOCK & ANDERSON, t. c.
- Raphonotus lowei*, San Pedro Bay, Cal., p. 590; RATHBUN, Amer. Natural. xxxiv, n. sp.
- †*Ranina reussi*, Tertiary, Hungary, p. 24, pl. ii, figg. 1-1c; LÖRRENTZ, Math. term. Kozlem. Magyar Ak. xxvii.
- †*R. budapestiniensis*, Tertiary, Hungary, p. 30, pl. i, figg. 2

- spina*, Tertiary, Hungary, p. 190, pls. i, figg. 2 & 3, ii, fig. 1; LÖRENTHEY, t. c.
- +*Rhachiosoma*, sp., Tertiary, Hungary, p. 80; LÖRENTHEY, t. c. n. sp.
- Rhinolithodes biscayensis*, p. 269, pl. xxvii, fig. 21; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Richardina spongicola*, pl. xlii, figg. 4 & 4a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Sarmatium*, g. def., *crassum*, p. 426; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Scalopidia*, g. def., *spinosipes*, p. 325; ALCOCK, t. c.
- Schizophrys aspera*, pl. xxxv, figg. 1 & 1a, *dama*, pl. xxxv, figg. 2 & 2a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Scomipera*, g. def., *investigatoris*, Diamond Is., p. 369, *crabricauda*, Karachi, p. 370; ALCOCK, J. Asiat. Soc. Bengal lxi, n. spp.
- S. myctiroides*, Singapore, similarity in shape between ♂ and ♀ abdomen, p. 760, pl. xlvii, fig. 14; LANCHESTER, P. Z. S. 1900.
- Scyllarida*, key to W. African genera, p. 309; RATHBUN, P. U. S. Mus. xxii.
- Seyramathia carpenteri*, p. 133, pl. xx, figg. 1-10; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Sergestes rubroguttatus*, pl. xli, fig. 5; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Sesarma*, g. def., p. 409, *quadratum*, p. 413, *pictum*, p. 414, *bidens*, p. 415, *edwardsi*, *intermedium*, p. 416, *meinerti*, p. 417, *andersoni*, p. 418, *taniolatum*, p. 419, *tetragonum*, p. 420, *brocki*, p. 421, *politum*, p. 422, *oceanicum*, p. 423, *longipes*, p. 424, *kraussi*, p. 425; ALCOCK, J. Asiat. Soc. Bengal lxi. *S.* and subgenera, keys to W. African spp., pp. 279 & 280; RATHBUN, P. U. S. Mus. xxii. *S. angolensis*, Angola, p. 59, pl. ii, fig. 11; DE MAN, Mem. Soc. zool. France xiii. *S. calypso*, Malacca, difference of individuals from the type, p. 757; LANCHESTER, P. Z. S. 1900.
- S. lanatum*, Bombay, p. 418, *latifemur*, Andamans, p. 422, *finni*, Andamans, p. 424; ALCOCK, t. c. *S. gardineri*, Funafuti and Rotuma, descr., p. 593, pl. xlii, fig. 8; BORRADAILE, P. Z. S. 1900. *S. fasciata*, Singapore, on marshy ground near the Sea, described, p. 758, pl. xlvii, fig. 12; LANCHESTER, P. Z. S. 1900. *S. aranea*, Kaupun Fadoro-Nias, p. 510, *ocypoda*, Bencoolen, p. 510; NOBILI, Ann. Mus. Genova xl, n. spp.
- S. rotundata papuo-malesiaca*, Andai, p. 268; NOBILI, Ann. Mus. Genova xl, n. subsp.
- Spirontocaris polaris*, p. 7, *spinus*, p. 8, *gaimardii*, p. 9, *turgida*, p. 10; STEBBING, Ann. Nat. Hist. v.
- Stenorkynchus longirostris*, p. 156, pl. xxii, fig. 6, *longipes*, p. 157, pls. xxi, fig. 18, xxii, figg. 7-11, *macrocheles*, p. 159, pls. xxi, figg. 19 & 20, xxii, figg. 17-21, *longicornis*, p. 160, pls. xxi, fig. 17, xxii, figg. 12-16; EDWARDS & BOUVIER, Decap. Exped. Trav.
- Sympagurus monstrosus*, pl. xxxii, fig. 4; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *S. gracilipes*, p. 194, pl. xxiv, figg. 7 & 8, *ruticheles*, p. 199, pl. xxiv, fig. 9; EDWARDS & BOUVIER, Decap. Exped. Trav.
- S. diogenes*, N. S. Wales, p. 172, pl. xxxiv, fig. 3; WHITLEGGE, Mem. Austral. Mus. iv, n. sp.
- +*Telphusa fluviatilis*, Tertiary, Hungary, p. 136, pl. viii, fig. 7; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii.
- Tetrias*, g. def., p. 335, *fischeri*, p. 366; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Thalamita investigatoris*, pl. xlvii, fig. 1, *exentatica*, pl. xlvii, fig. 2, *imparimanus*, pl. xlvii, fig. 3, *hanseni*, pl. xlvii, fig. 4, *wood-masoni*, pl. xlviii, fig. 1, var. *taprobanica*, pl. xlviii, fig. 2, *oculea*, pl. xlviii, fig. 3; ALCOCK & ANDERSON, Illustr. Zool. Investigator. *T. prymna*, notes on specimens from Torres Sts., p. 22; CALMAN, Tr. Linn. Soc. viii.

- T. admete*, var. *edwardsi*, nom. nov. for A. M. Edwards' *Thalamita admete*, p. 579; BORRADAILE, P. Z. S. 1900. *T. crenata*, variations in specimens from Singapore, p. 748; LANCHESTER, P. Z. S. 1900.
- +*Titanocarcinus kochii*, Tertiary, Hungary, p. 71, pl. iv, figg. 1 & 2; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. sp.
- Tlos patella*, pl. xxviii, fig. 5; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Tridacnocris biunguiculata*, nom. nov. for *Anchistus biunguiculatus*, p. 235; NOBILI, Ann. Mus. Genova xl.
- Tylidiplax*, g. def., p. 373, *indica*, Karachi, p. 374; ALCOCK, J. Asiat. Soc. Bengal lxi, n. sp.
- Tylocarcinus styx*, notes, p. 574; BORRADAILE, P. Z. S. 1900.
- Tympanomerus*, g. def., *orientalis*, p. 371; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Typhlocarcinodes*, n. g. def., p. 326; ALCOCK, t. c.
- Typhlocarcinus*, g. def., p. 321, *nudus*, p. 322, *villosus*, p. 322; ALCOCK, t. c. *T. rubidus*, Bay of Bengal, p. 323; ALCOCK, t. c. n. sp.
- +*Typilobus semseyanus*, Tertiary, Hungary, p. 35, pl. i, figg. 3a-4d; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. sp.
- Uca spinicarpa*, Galveston, Texas, p. 586; RATHBUN, Amer. Natural. xxxiv. *U. thayeri*, Brazil, descr., p. 134, pl. viii, figg. 1 & 2; RATHBUN, P. Washington Ac. ii, n. spp.
- U.*, key to W. African spp., p. 275; RATHBUN, P. U. S. Mus. xxii. *U. acuta*, colour differences between specimens from Singapore and Malacca, p. 753, *dussumieri*, gay colouring of the ♀, p. 753; LANCHESTER, P. Z. S. 1900. *U. dussumieri*, p. 273, *coarctata*, p. 273, notes; NOBILI, Ann. Mus. Genova xl. *U. spinicarpa*, notes on a doubtful specimen from Brazil, p. 136; RATHBUN, P. Washington Ac. ii.
- Upogebia deltiura*, recurrence in the Moray Firth, p. 126; SCOTT, Ann. Scott. Nat. Hist. ix. *U.*, discussion of the g., p. 42, *capensis*, notes, p. 45; STEBBING, S. Afric. Crust.
- Uroptychus cavirostris*, pl. xlv, fig. 3, *fusimanus*, pl. xlv, fig. 4, *bacillimanus*, pl. xlv, figg. 3 & 3a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Xanthias parvus*, Rotuma, descr., p. 582, pl. xli, fig. 5; BORRADAILE, P. Z. S. 1900, n. sp.
- +*Xanthilites bavaricus*, Tertiary, Hungary, p. 198, pl. ii, figg. 2a-3b; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. sp.
- Xanthodes melanodactylus*, p. 85, pl. xvi, fig. 3, var. *rufopunctatus*, p. 87, pl. xvi, figg. 4 & 5, *granosus*, p. 87, pl. xvi, figg. 6-13, *talismani*, p. 91, pl. xvi, figg. 14-18; EDWARDS & BOUVIER, Decap. Exped. Trav.
- +*Xanthopsis büttnerii*, Tertiary, Hungary, p. 105, pl. vi, figg. 1a-2b; LÖRENTHEY, Math. term. Kozlem. Magyar Ak. xxvii, n. sp.
- Varuna*, g. def., p. 400, *litterata*, p. 401; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Xaivida*, nom. nov. for *Platyonychida*, p. 223; BERG, Comun. Mus. Buenos Aires i.
- Xanthasia*, g. def., p. 340, *murigera*, p. 341; ALCOCK, t. c.
- Xenocarcinoides*, n. g. defined for *rostratus*, Funafuti, descr., p. 573, pl. xl, fig. 1; BORRADAILE, P. Z. S. 1900, n. sp.
- Xenocarcinus tuberculatus*, pl. xxxiii, figg. 3 & 3a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
- Xenophthalmodes*, g. def., p. 322, *moebii*, p. 324; ALCOCK, J. Asiat. Soc. Bengal lxi.
- Xenophthalmus*, g. def., *pinnoteroides*, p. 332, *obscurus*, p. 333; ALCOCK, t. c.
- Zaops*, n. g. of *Pinnotheridae* for *Z. depressa* (Say), p. 590. † Amer. Natural. xxxiv.

## SCHIZOPODA.

The following Memoirs should be consulted:—HOLT & BEAUMONT (86), MARSH (104), SAMTER & WELTNER (136), STEBBING (157), THOMSON (167).

*Dasymysis*, n. g. defined, p. 245, for *Acanthomysis longicornis*; HOLT & BEAUMONT, Tr. Dublin Soc. vii.

*Erythropis serrata*, modifications of existing descriptions, p. 231; HOLT & BEAUMONT, t. c.

*Euphausia*, lengthy discussion of the g., p. 537, list of characters (with notes on them) available for specific distinction, p. 541, table of spp. divided into two groups, p. 544; STEBBING, P. Z. S. 1900.

*E. valleritini*, Stanley Harbour, Falkland Is., described, p. 545, pl. xxxvii; STEBBING, t. c., n. sp.

*Leptomysis lingvura*, identity with *L. marioni*, p. 237; HOLT & BEAUMONT, Tr. Dublin Soc. vii.

*Macromysis flexuosa*, discussed and compared with *M. neglecta*, p. 239; HOLT & BEAUMONT, t. c.

*Macropsis slabberi*, occurrence in the Moray Firth, p. 126; SCOTT, Ann. Scott. Nat. Hist. ix.

*Mysidella*, g. defined, p. 247, for *typica*, descr., p. 248, pl. xvi, figg. 6 & 7; HOLT & BEAUMONT, Tr. Dublin Soc. vii.

*Mysidopsis hibernica*, notes, p. 235, pl. xvi, figg. 4 & 5; HOLT & BEAUMONT, t. c.

*Mysis relicta*, p. 641; SAMTER & WELTNER, Zool. Anz. xxiii.

*Nyctiphanes norvegica*, notes, p. 224, *conchii*, diagnosis, p. 225, pl. xvi, fig. 1 & fig. i; HOLT & BEAUMONT, Tr. Dublin Soc. vii.

*Parerythropis obesa*, descr. and notes, p. 232, pl. xvi, figg. 2 & 3; HOLT & BEAUMONT, t. c.

*Siriella denticulata*, Otago Harbour, N. Z., descr., p. 482, pl. xxxiii, figg. 1-5; THOMSON, J. Linn. Soc. xxvii.

*Tenagomysis*, n. g. defined, p. 483, for *novæ-zealandiæ*, Kaikorai lagoon, near Dunedin, N. Z., p. 484, pls. xxxiii & xxxiv, figg. 6-17; THOMSON, J. Linn. Soc. xxvii, n. sp.

*Thysanoessa macrura*, sp. discussed, p. 547; STEBBING, P. Z. S. 1900.

## STOMATOPODA.

The following Memoirs deal with this order:—BERG (11), LANCHESTER (96), NOBILI (110 & 111), RATHBUN (129), WHITLEGGE (186), YOUNG (189).

*Lysiosquilla platensis*, Argentina, p. 230; BERG, Comun. Mus. Buenos Aires i, n. sp.

*Nerocila depressa*, refigured, p. 265, pl. xii, fig. 5; LANCHESTER, Ann. Nat. Hist. vi.

*Protosquilla hystrix*, Beagle Bay, p. 276; NOBILI, Ann. Mus. Genova xl, n. sp.

*Pseudosquilla stylifera*, N. S. Wales, p. 198; WHITLEGGE, Mem. Austral. Mus. iv.

## EDRIOPTHALMA.

## CUMACEA.

The following Memoirs may be consulted:—SARS (137), SCOTT (149), ZIMMER (190).



- Campylaspis*, g. def., p. 83, *rubicunda*, p. 84, pls. lvi & lvii, *glabra*, p. 86, pl. lviii, *sulcata*, p. 86, pl. lix, *costata*, p. 87, pl. lx, *undata*, p. 88, pl. lxi, *horrida*, p. 89, pl. lxii, *verrucosa*, p. 90, pl. lxiii, *affinis*, p. 91, pl. lxiv ; SARS, Crust. Norway iii.
- Cumella*, g. def., p. 80, *pygmaea*, p. 81, pl. lv ; SARS, t. c.
- Diastylis*, g. def., p. 42, *rathkei*, p. 44, pls. xxxiii & xxxiv, var. p. 107, pls. lxx-lxxii, *cornuta*, p. 45, pls. xxxv & xxxvi, *rugosa*, p. 48, pl. xxxvii, *lucifera*, p. 49, pl. xxxviii, *rostrata*, p. 51, pl. xxxix, *tumida*, p. 52, pl. xl, *goodsiri*, p. 54, pl. xli, *spinulosa*, p. 55, pl. xlii, *echinata*, p. 57, pl. xliii, *scorpioides*, p. 58, pl. xliv ; SARS, t. c.
- Diastylodes*, g. def., p. 60, *serrata*, p. 61, pl. xlv, *biplicata*, p. 62, pl. xlvi ; SARS, t. c.
- Dyastylopsis*, g. def., p. 64, *resima*, p. 65, pl. xlvii ; SARS, t. c.
- Eudorella*, g. def., p. 35, *emarginata*, p. 36, pls. xxvii & xxviii, *truncatula*, p. 37, pl. xxix, *hirsuta*, p. 38, pl. xxx ; SARS, t. c.
- Eudorellopsis*, g. def., p. 39, *deformis*, p. 40, pls. xxxi & xxxii ; SARS, t. c.
- Hemilampropsa cristata*, p. 25, pl. xviii ; SARS, t. c.
- Leptostylis*, g. def., p. 67, *longimana*, p. 68, pl. xlviii, *macrura*, p. 69, pl. xlix, *ampullacea*, p. 70, pl. l, fig. 1, *villosa*, p. 71, pl. l, fig. 2 ; SARS, t. c.
- Leucon*, g. def., p. 28, *nasicus*, p. 30, pls. xxi & xxii, *nasicoides*, p. 31, pl. xxiii, *fulvus*, p. 32, pl. xxiv, *pallidus*, p. 33, pl. xxv, *acutirostris*, p. 34, pl. xxvi ; SARS, t. c.
- Petalotarnia*, g. def., p. 77, *declivis*, p. 77, pl. liv ; SARS, t. c.
- Platyaspis*, g. def., p. 26, *typica*, p. 27, pls. xix & xx ; SARS, t. c.
- Pseudocuma*, g. def., p. 73, *cercaria*, p. 74, pls. li & lii ; SARS, t. c.
- P. similis*, W. Coast of Norway, p. 76, pl. liii ; SARS, t. c. n. sp.

## ISOPODA AND ANISOPODA.

- Papers dealing with these groups are:—BORRADAILE (16), DOLLFUS (49), DOLLFUS & VIRÉ (48), PÉREZ (121 & 122), RICHARDSON (131 & 132), SAYCE (141, 143, 144), STEBBING (156 & 157), TUA (169), VERHOEFF (175), VIRÉ (176), WEBB (179).
- Armadillidium*, g. divided into 4 subgenera, *Troglarmadillidium*, *Typhlarmadillidium*, *Armadillidium*, *Pleurarmadillidium*. *A. stygium*, Wolfshöhle, p. 125, *trebinganum*, Trebinge, p. 126, *fruxgalii*, Trebinge, p. 131, *omblae*, Gravosa, p. 131 ; VERHOEFF, Zool. Anz. xxiii. *A. vulgare* n. vars., p. 5, *album* n. var. descr., p. 6 ; TUA, Boll. Mus. Torino, No. 374.
- A. pacificum*, Funafuti, p. 796, pl. li, figg. 1 & 1a ; BORRADAILE, P. Z. S. 1900. *A. peracca*, S. Cataldo, Italy, p. 2, fig. 1, *gestri*, Borgia Marina, Italy, p. 5, fig. 3, *brevicaudatum*, Moncenisio, p. 6, fig. 2 ; TUA, Boll. Mus. Torino, No. 374, n. spp.
- Armadillo hawaiiensis* = *Spherillo hawaiiensis* Dana, note on sexual dimorphism, the ♂ being identical with *A. bidens* Budde-Lund, and the ♀ with *A. australis* Budde-Lund, p. 521, pl. xx, figg. 1a & b ; DOLLFUS, Fauna Hawaiiensis ii, Part v.
- A. albopinosus*, Oahu, p. 521, pl. ii, figg. 2a-h, *perkinsi*, Maui, p. 522, pl. ii, figg. 3a-f, *danae*, Kauai, p. 522, pl. ii, figg. 4a-g, *sharpi*, Kauai, p. 523, pl. ii, figg. 5a & b, described ; DOLLFUS, Fauna Hawaiiensis ii, Part v, n. spp.
- Bopyrus alpehi*, Brazil, descr., p. 158, RICHARDSON, P. Washington Ac. ii, n. sp.
- Cacospharoma faucheri*, Sauve ; DOLLFUS & VIRÉ, C.R. Ac. Sci. xxxv, n. sp.

- Cassidina*, g. discussed at length, p. 558, *emarginata*, descr., p. 562; STEBBING, P. Z. S. 1900.
- Corallana acuticauda*, Brazil, ♂ descr., p. 157; RICHARDSON, P. Washington Ac. ii.
- Cymothoidae*, fam. discussed, p. 55; STEBBING, S. Afric. Crust.
- Cyphoniscinae*, n. sub. fam. of *Oniscidae* defined, p. 122; VERHOEFF, Zool. Anz. xxiii.
- Cyphoniscus*, n. g. defined, p. 122, for *herzegowinensis*, Trebinge, p. 123; VERHOEFF, Zool. Anz. xxiii, n. sp.
- Exospharoma*, n. g. defined, p. 553, for *Spharoma gigas*, described, p. 553, pl. xxxix; STEBBING, P. Z. S. 1900.
- Geoligia perkinsi*, Hawaii, described, p. 525, pl. ii, figg. 6a-i; DOLLFUS, Fauna Hawaiiensis ii, Part v, n. sp.
- Haplophthalmus mengii*, occurrence in Ireland, p. 246; KANE, Irish Natural. ix.
- Iais pubescens*, on *Exospharoma gigas*, Falkland Is., p. 549, pl. xxxviii; STEBBING, P. Z. S. 1900.
- Janirella*, n. g. defined, p. 124, for *pusilla*, Victoria (Freshwater), p. 125, pls. xviii, xix; SAYCE, P. Soc. Victoria xiii, n. sp.
- Idoteidae*, fam. discussed, p. 51; STEBBING, S. Afric. Crust.
- Leptochelia*, sp. descr., p. 797, pl. li, fig. 2-2c; BORRADAILE, P. Z. S. 1900.
- Leucocyphoniscus*, n. g. defined, for *veruciger*, Mt. Generoso, L. Lugano, p. 124; VERHOEFF, Zool. Anz. xxiii.
- Mesneria*, notes on g., p. 57, *imbricata*, notes, p. 58; STEBBING, S. Afric. Crust.
- Paridotea*, n. g. defined, p. 52, for *Idotea unguolata*, p. 53; STEBBING, t. c.
- Phreatoicoides*, n. g. defined for *gracilis*, Thorpdale, Gippsland, Victoria (Freshwater), descr., p. 124, pls. x-xii; SAYCE, P. Soc. Victoria xii, n. sp.
- Phreatoicus shephardi*, Victoria, descr., p. 25, pl. iii; SAYCE, op. cit. xiii, n. sp.
- Porcellio ratzeburgii* and *intermedius* compared, p. 7; TUA, Boll. Mus. Torino, No. 374.
- P. nobilii*, Sardinia, p. 8, fig. 4, *cameranii*, S. Cataldo, p. 9, fig. 5; TUA, t. c., n. spp.
- Spharomida*, discussion of fam., p. 552; STEBBING, P. Z. S. 1900.
- Titanethes*, g. discussed, p. 117, *herzegowinensis*, S. Herzegowina, defined and compared with *albus*, p. 118, *biseriatus*, Trebinge, p. 120; VERHOEFF, Zool. Anz. xxiii, ? n. spp.
- Trichoniscidae*, fam. discussed, p. 564; STEBBING, P. Z. S. 1900.
- Trichoniscus*, g. discussed, p. 565, *magellanicus* descr., p. 566; STEBBING, P. Z. S. 1900. *T. vividus*, occurrence at Cappagh, Co. Waterford, p. 158; SCHARFF, Irish Natural. ix.

## AMPHIPODA.

- Consult:—CHEVREUX (24), CHILTON (25 & 26), NORMAN (113-116), SAMTER & WELTNER (136), SAYCE (142), STEBBING (158).
- Amphilocheus neapolitanus*, notes, p. 34, pl. iii, fig. 1; NORMAN, Ann. Nat. Hist. vi.
- Anonyx nugax*, notes, p. 209; NORMAN, op. cit. v.
- Crangonyx*, note, p. 154, *subterraneus*, p. 155, pl. xviii, fig. 4, described; CHILTON, J. Linn. Soc. xxviii.
- Cyclocaris faroensis*, Faroe Channel, p. 197, pl. vi, figg. 5-15; NORMAN, Ann. Nat. Hist. v, n. sp.
- Cyproidea*, notes on the g., p. 37; NORMAN, op. cit. vi.
- C. otakensis*, Otago, N. Z., p. 243, pl. v; CHILTON, op. cit. v, n. sp.
- Grubia hirsuta*, Atlantic, fig. and descr., p. 95; CHEVREUX, Bull. Soc. zool. France xxv, n. sp.

- Haploops setosa*, notes, p. 345; NORMAN, Ann. Nat. Hist. v.  
*Harpinia latipes*, N.E. of the Butt of Lewis, p. 338, fig. in text; NORMAN, t. c., n. sp.  
*Hyperia galba*, notes, p. 128; NORMAN, t. c.  
*Lanceola murrayi*, Faroe Channel, p. 135, pl. vi, figg. 1-5; NORMAN, t. c., n. sp.  
*Metope rubrovittata*, notes and fig., p. 41, pl. iii, fig. 5; NORMAN, op. cit. vi.  
*M. abecisa*, E. coast of England, p. 42, pl. iii, figg. 6-10; NORMAN, t. c., n. sp.  
*Metopina* n. g. for *Metope palmata*, *M. clypeata* and *M. robusta*, p. 45; NORMAN, t. c.  
*Niphargus*, g. discussed and defined, p. 144, *subterraneus*, p. 147, pls. xvi & xvii, fig. 1, *kochianus*, p. 150, pls. xvi & xvii, figg. 2 & 3, *fontanus*, p. 153, descr.; CHILTON, J. Linn. Soc. xxviii.  
*N. pulchellus*, Thorpdale, Gippsland, Victoria (Freshwater), descr., p. 153, pls. xv & xvi; SAYCE, P. Soc. Victoria xii, n. sp.  
*Orchestia platensis*, Sandwich Is., p. 527, pl. xxi A, *pickeringi*, Sandwich Is., p. 528, pl. xxi B, notes and descriptions; STEBBING, Fauna Hawaiiensis ii, pt. 5.  
*Orchestoidea brito*, notes, p. 140; NORMAN, Ann. Nat. Hist. v.  
*Palinnotus*, n. g. def. for *Pereionotus thomsoni*, p. 16; STEBBING, Ann. Nat. Hist. v.  
*Pallasiella quadrispinosa*, p. 643; SAMTER & WELTNER, Zool. Anz. xxiii.  
*Paraorchestia hawaiiensis*, description of ♂ from the Sandwich Is., p. 530, pl. xxi C; STEBBING, Fauna Hawaiiensis ii, pt. 5.  
*Phoxocephalus*, note on g., p. 333, *holbölli*, p. 334, *oculatus*, p. 334, *simplex*, p. 335; NORMAN, Ann. Nat. Hist. v.  
*Phronima sedentaria*, p. 397, *atlantica*, p. 399, *colletti*, p. 401, secondary sexual characters; VOSSELER, Zool. Anz. xxiii.  
*P. stebbingii*, p. 402; VOSSELER, t. c., n. sp.  
*Pontoporeia affinis*, p. 644; SAMTER & WELTNER, Zool. Anz. xxiii.  
*Schisturella*, n. g. defined, for *Tryphosa pulchra*, p. 208; NORMAN, Ann. Nat. Hist. v.  
*Stenothoe setosa*, Plymouth, p. 39, pl. iii, figg. 2-4; NORMAN, op. cit. vi, n. sp.  
*Tryphosella abyssi*, Faroe Channel, p. 205, pl. vi, figg. 16-20; NORMAN, op. cit. v, n. sp.  
*Vibilia borealis*, distinction from *V. krøyeri*, p. 137; NORMAN, t. c.

## LEPTOSTRACA.

(Vacant.)

## ENTOMOSTRACA.

## PHYLLOPODA.

## BRANCHIOPODA.

Consult:—BERG (11), GUNTHER (79), SARS (140).

*Artemia urmiana*, Lake Urmi, Persia, p. 395, pl. xxv; GUNTHER, J. Linn. Soc. xxvii, n. sp.*Lepidurus patagonicus*, Argentina, p. 232; BERG, Comun. Mus. Buenos Aires i, n. sp.



## CLADOCERA.

Consult:—COSMOVICI (35), EKMAN (59), HARTWIG (84), SARS (139), SCOURFIELD (151, 152), STINGELIN (163).

*Alona protzi*, Brandenburg, p. 228; HARTWIG, SB. Ges. naturf. Berlin 1900; *A. sarasinorum*, Celebes, p. 197, pl. xiv, figg. 4 & 5; STINGELIN, Rev. Suisse Zool. viii: n. spp.

*Bosmina coregoni*, Patagonia, p. 73, pl. iv, fig. 20; EKMAN, Zool. Jahrb. Syst. xiv.

*Campocercus aloniceps*, Patagonia, p. 75, pl. iv, figg. 21-24; EKMAN, t. c., n. sp.

*Ceriodaphnia dubia* var. *acuminata*, nov., p. 69, pl. iv, fig. 16; EKMAN, t. c.

*C. limicola*, Patagonia, p. 70; EKMAN, t. c., n. sp.

*Chydorus clavatus*, Roumania, descr. and fig., p. 158; COSMOVICI, Bull. Soc. zool. France xxv; *C. patagonicus*, Patagonia, p. 81, pl. iv, figg. 31-33; EKMAN, Zool. Jahrb. Syst. xiv: n. spp.

*Cyclotheria histopi*, India, p. 25, pl. iv, figg. 13 & 14; SARS, Arch. Naturv. Christian. xxii, Art. 9.

*Daphnia cavicervix*, Patagonia, p. 62, pl. iii, figg. 1-7, *commutata*, Patagonia, p. 65, pl. iii, figg. 8-11; EKMAN, Zool. Jahrb. Syst. xiv, n. spp.

*D.*, swimming habits, p. 395; SCOURFIELD, J. Quekett Club vii.

*Diaphanosoma sarsi*, var. *celebensis*, nov., Celebes, p. 194, pl. xiv, figg. 1 & 2; STINGELIN, Rev. Suisse Zool. viii.

*Eulimnadia similis*, India, p. 21, pl. iv, figg. 1-7; SARS, Arch. Naturv. Christian. xxii, Art. 9.

*E. gibba*, India, p. 23, pl. iv, figg. 8-12, SARS, t. c., Art. 9, n. sp.

*Jheringula*, n. g. def., p. 4, for *paulensis*, Brazil, p. 5, pls. i & ii; SARS, t. c. Art. 6, n. sp.

*Lathomura rectirostris*, var. *dorsispina*, nov., p. 157, Roumania; COSMOVICI, Bull. Soc. zool. France xxv.

*Leptestheria nobilis*, India, p. 11, pl. ii, *hendersoni*, India, p. 17, pl. iii; SARS, Arch. Naturv. Christian. xxii, Art. 9, n. spp.

*Macrothrix magnantennulata*, Roumania, fig. and descr., p. 158; COSMOVICI, Bull. Soc. zool. France xxv; *M. oviformis*, Patagonia, p. 71, pl. iv, figg. 17-19; EKMAN, Zool. Jahrb. Syst. xiv: n. spp.

*Moina paradoxa*, Celebes, notes, p. 196, pl. xiv, fig. 3; STINGELIN, Rev. Suisse Zool. viii.

*Pleuroxus scopuliferus*, Patagonia, p. 78, pl. iv, figg. 25-29, *ternispinosus*, Patagonia, p. 81, pl. iv, fig. 30; EKMAN, Zool. Jahrb. Syst. xiv, n. spp.

*Pseudodiaptomus poppei*, Celebes, p. 200, pl. xiv, figg. 6-10; STINGELIN, Rev. Suisse Zool. viii, n. sp.

*Scapholeberis spinifera*, var. *brevispina*, p. 68, pl. iii, figg. 14 & 15; EKMAN, Zool. Jahrb. Syst. xiv. *S. mucronata*, relation to the Surface-Film of Water, p. 309 and fig.; SCOURFIELD, J. Quekett Club vii.

*Simocephalus vetulus*, var. *brandti*, nov., Roumania, fig. and descr., p. 156; COSMOVICI, Bull. Soc. zool. France xxv. *S. vetulus*, Patagonia, p. 68, pl. iii, figg. 12 & 13; EKMAN, Zool. Jahrb. Syst. xiv.

*Streptocephalus dichotomus*, India, p. 4, pl. i; SARS, Arch. Naturv. Christian. xxii, Art. 9.

## COPEPODA.

The following papers deal with *Copepoda*:—AURIVILLIUS (8), BRADY (17), CLEVE (32), VON DOUVE (63), EMBLETON (60), GIARD (69), GIESBRECHT (70, 71), NETTOVICH (109), SCOTT (148), STEBBING (156), STEUER (161, 162), THIELE (164), THOMPSON (166), THOMSON & SCOTT (167), VANEY & CONTE (172).

- Acontiphorus*, g. def., p. 103, Naples spp. discussed, p. 14, pls. i, fig. 5, iv, figg. 29-52, synonymy, p. 81; GIESBRECHT, Fauna Stat. Neapel xxv.
- Argulus viridis*, on *Rhodeus amarus*, Europe, p. 1, pl. i; NETTOVICH, Arb. Inst. Wien xiii; *A. africanus*, E. Africa, p. 47, *japonicus*, Yeddo, p. 48, *scutiformis*, Japan, p. 48; THIELE, Zool. Anz. xxiii: n. spp.
- Artotrogus*, g. def., p. 111, synonymy, p. 92; GIESBRECHT, Fauna Stat. Neapel xxv.
- Asterocheres*, g. def., p. 99, spp. found in Bay of Naples discussed, p. 1, pls. i, figg. 1 & 2, ii, iii, figg. 1-26, synonymy, p. 70; GIESBRECHT, t. c.
- Bradypontius*, g. def., p. 107, Naples spp. descr., p. 27, pl. vi, figg. 15-40, synonymy, p. 88; GIESBRECHT, t. c.
- Callocheres*, g. def., p. 102, Naples spp. descr., p. 12, pls. i, fig. 3, iii, figg. 27-45, synonymy, p. 79; GIESBRECHT, t. c.
- Cancerilla*, g. def., p. 112, *tubulata*, Bay of Naples, p. 41, pl. x, figg. 1-10, synonymy, p. 95; GIESBRECHT, t. c.
- Canthocamptus wierzejskii*, notes, p. 105; DOUWE, Zool. Anz. xxiii.
- Cervinia bradyi*, descr., p. 58, figg. on pls. iii & iv; GIESBRECHT, Mt. Stat. Neapel xiv.
- Chonopeltis*, n. g. of *Argulidae* defined, p. 46, *inermis*, E. Africa, p. 47; THIELE, Zool. Anz. xxiii, n. sp.
- Claudiidae*, nom. nov. for *Hersiliidae*, previously occupied, p. 213; EMBLETON, J. Linn. Soc. xxviii.
- Clausidium*, former name revived for *Hersilia*, previously occupied, p. 213; EMBLETON, t. c.
- Cribrapontius*, g. def., p. 107, synonymy, p. 86; GIESBRECHT, Fauna Stat. Neapel xxv.
- Crioniscus*, n. g. defined for *equitans*, parasitic in *Balanus perforatus*; PÉREZ, C.R. Ac. Sci. cxxx, p. 520; PÉREZ, Bull. Sci. France Belgique xxiii, p. 483, n. sp.
- Cryptopontius*, g. def., p. 108, Naples Bay spp. descr., p. 30, pls. i, figg. 7, 12, viii, 1-41, x, 28 & 29, synonymy, p. 89; GIESBRECHT, Fauna Stat. Neapel xxv.
- Cyclopocera berniciensis*, Alnmouth, p. 438, pl. xiii, figg. 1-8; BRADY, Tr. Northumb. Soc. xiii, n. sp.
- Cyclopina*, g. def., p. 40, *litoralis*, p. 43, *elegans*, p. 44, *gracilis*, p. 45, figg. on pl. iii; GIESBRECHT, Mt. Stat. Neapel xiv.
- Cyclops salinus*, Alnmouth, p. 432, pl. xii, figg. 11-15, BRADY, Tr. Northumb. Soc. xiii; *C. roumanæ*, Roumania, p. 162, descr. & fig., COSMOVICI, Bull. Soc. zool. France xv: n. spp.
- Dactylopus longirostris*, Alnmouth, p. 434, pl. xiii, figg. 9-12; BRADY, Tr. Northumb. Soc. xiii.
- Dermatomyzon*, g. def., p. 101; Naples, sp. descr., p. 7, pls. i, fig. 4, v, figg. 1-14, synonymy, p. 77; GIESBRECHT, Fauna Stat. Neapel xxv.
- Diaptomus zachariae*, p. 305, *alluaudi*, p. 307, descr. and notes; STEUER, Verh. Ges. Wien l. *D. graciloides*, var. *padana*, p. 321, pl. ii, fig. 4, *vulgaris*, var. *intermedia*, p. 323, pl. ii, fig. 5, var. *skutariensis*, nov., p. 324, pl. i, figg. 1-9, var. *transylvanica*, p. 326, pl. ii, figg. 1-3, 6-8, Balkans, descr.; STEUER, SB. Ak. Wien cix.
- D. furca*, Roumania, descr. and fig., p. 161; COSMOVICI, Bull. Soc. zool. France xxv, n. sp.
- Diocus clini*, parasitic on *Clinus argentatus*, Toulon, p. 97, pl. x; VANET & CONTE, Rev. Suisse Zool. viii, n. sp.
- Dyspontius*, g. def., p. 109, Naples spp. discussed, p. 33, pls. i, figg. 8-10, vii, figg. 1-23, x, figg. 27, 30, 31, synonymy, p. 90; GIESBRECHT, Fauna Stat. Neapel xxv.
- Dystrogus*, g. def., p. 110, *gladiator*, Bay of Naples, p. 38, pl. ix, figg. 14-23, synonymy, p. 90; GIESBRECHT, t. c., n. sp.

- Echinocheres violaceus*, Alnmouth, notes, p. 437, pl. xii, figg. 9 & 10; BRADY, Tr. Northumb. Soc. xiii.
- Enterognathus*, n. g. for *comatulae*, parasitic in *Antedon*, p. 61, pl. v; GIESBRECHT, Mt. Stat. Neapel xiv, n. sp.
- Epischura baikalensis*, Lake Baikal, p. 226, pl. vi; Sars, Annuaire Mus. St. Petersb. v, n. sp.
- Euryte*, g. defined, p. 52, *longicauda*, p. 57, figg. on pl. iv; GIESBRECHT, Mt. Stat. Neapel xiv.
- E. robusta*, Bay of Naples, p. 58, figg. on pl. iv; GIESBRECHT, t. c.
- Goidelia*, n. g. of *Clausididae* (n. fam.) for *japonica*, in rectum of *Echirus uncinatus* from Japan, p. 211, pls. xxi & xxii; EMBLETON, J. Linn. Soc. xxviii, n. sp.
- Heterochata angulata*, N. Sea, p. 38, figg.; AURIVILLIUS, Svenska Ak. Handl. xxxii, n. sp.
- Ilyopsilus coriaceus*, Alnmouth, notes, p. 429, pl. xi, p. 434; BRADY Tr. Northumb. Soc. xiii.
- Leptopsyllus herdmanni*, Liverpool Bay, ♀ descr., p. 141, pl. viii; THOMSON & SCOTT, Tr. Liverp. Biol. Soc. xiv, n. sp.
- Monostrella rigida*, parasitism of, p. 397; GIARD, Bull. Soc. ent. France 1900.
- Myzopontius*, g. def., p. 106, *pungens*, Naples Bay, p. 24, pls. i, fig. 6, vi, 1-14, synonymy, p. 85; GIESBRECHT, Fauna Stat. Neapel xxv.
- Neopontius*, g. def., p. 106, synonymy, p. 85; GIESBRECHT, t. c.
- Parartotrogus*, g. def., p. 111, *richardi*, Bay of Naples, p. 40, pls. i, fig. 13, ix, figg. 35-45, x, fig. 18, synonymy, p. 94; GIESBRECHT, t. c.
- Pontoeciella*, g. def., p. 105, *abyssicola*, descr., p. 20, pl. v, figg. 15-27, synonymy, p. 83; GIESBRECHT, t. c.
- Pteropontius*, g. def., p. 110, *cristatus*, Bay of Naples, descr., p. 36, pl. vii, figg. 24-39, x, figg. 15-17, synonymy, p. 91; GIESBRECHT, t. c.
- Pterinopsyllus*, g. def. and discussed, p. 46, *insignis*, p. 50, figg. on pl. ii; GIESBRECHT, t. c.
- Pt. egregius*, *illustris*, Bay of Naples, p. 51, figg. on pl. ii; GIESBRECHT, t. c. n. spp.
- Ratania*, g. def., p. 105, *flava* descr., p. 22, pl. x, figg. 20-22, synonymy, p. 84; GIESBRECHT, t. c.
- Rhynchomyzon*, g. def., p. 102, Naples spp. descr., p. 10, pl. i, fig. 11, v, figg. 28-46, x, fig. 23, synonymy, p. 78; GIESBRECHT, t. c.
- Scottocheres*, g. def., p. 104, Naples spp. discussed, p. 17, pl. iv, figg. 1-28, synonymy, p. 82, GIESBRECHT, t. c.
- Scottomyzon*, g. def., p. 103, synonymy, p. 80; GIESBRECHT, t. c.
- Sestropontius*, g. def., p. 107, *bulliger*, Bay of Naples, p. 26, pl. ix, figg. 1-13, synonymy, p. 88; GIESBRECHT, t. c., n. sp.
- Sphyrion*, g. defined, *lavigatum*, descr., p. 60, pl. 4; STEBBING, S. Afric. Crust. S. *lavis*, p. 278, pl. xvii; THOR, Ann. Sci. Nat. xi.
- S. australicus*, Australia, p. 280, pl. xviii; THOR, t. c., n. sp.
- Stenhelia limicola*, Alnmouth, p. 433, pl. xii, figg. 1-7; BRADY, Tr. Northumb. Soc. xiii, n. sp.
- Thaumatoessa armoricana*, notes on parasitism etc., p. 395; GIARD, Bull. Soc. ent. France 1900.

## OSTRACODA.

Memoirs dealing with *Ostracoda* are:—CHAPMAN (23), CHMIELEWSKI (28), EGGER (58), GEINITZ & SCHACKO (68), HARTWIG (80-83), KAUFMANN (88-90), LIENENKLAUS (98), NAMIAS (108), ULRICH (170).

†*Argillacea obtusa*, Tertiary, N. Germany, p. 508, pl. xix, fig. 4; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. ii, n. sp.

- †*Bairdia subdeltoidea*, p. 177, *arcuata*, p. 178, pl. xxvii, figg. 1-3, *harrisiana*, p. 178, pl. xxvii, figg. 13-15, *modesta*, p. 179, pl. xxvii, figg. 4-6; EGGER, Abh. Bayer. Ak. xxi.
- †*B. nesselssdorfensis*, Red Limestone of Nesselssdorf (Tithonian), p. 326, fig. 2; CHAPMAN, Geol. Mag. vii; †*B. elongata*, p. 509, pl. xix, fig. 5, *brevis*, p. 510, pl. xix, fig. 6; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii: n. spp.
- †*Bythocypris simulata*, p. 179, pl. xxvii, figg. 58-60; EGGER, Abh. Bayer. Ak. xxi.
- †*B. jurassica*, Red Limestone of Nesselssdorf (Tithonian), p. 325, fig. 1; CHAPMAN, Geol. Mag. vii, n. sp.
- Candona dentata*, *brevis*, p. 570, *rara rostrata*, *pubescens*, p. 571, notes; HARTWIG, Zool. Anz. xxiii. *C. marchica*, p. 369, pls. xxvii, figg. 1-3, xxviii, figg. 1-5, xxxi, fig. 19, *compressa*, p. 371, pls. xxvii, figg. 4-6, xxviii, figg. 6-11, xxxi, fig. 18, *pubescens*, p. 374, pla. xxvii, figg. 7-9, xxviii, figg. 12-17, xxxi, fig. 20, *candida*, p. 379, pla. xxvii, figg. 10-13, xxviii, figg. 18-25, *deveza*, p. 383, pls. xxvii, figg. 14 & 15, xxx, figg. 1-5, xxxi, fig. 22, *studerii*, p. 385, pls. xxvii, figg. 16-20, xxx, figg. 6-11, xxxi, fig. 23, *neglecta*, p. 387, pls. xxix, figg. 1-5, xxx, figg. 12-18, xxxi, fig. 21, *protza*, p. 390, pl. xxxi, figg. 6-16; KAUFMANN, Rev. Suisse Zool. viii.
- C. lobipes*, Brandenburg, p. 51; HARTWIG, Zool. Anz. xxiii; *C. reniformis*, Brandenburg, p. 139, *holzkampfi*, Brandenburg, p. 149; HARTWIG, SB. Ges. naturf. Berlin 1900; *C. deveza*, p. 108, *studerii*, p. 109, both from Switzerland; KAUFMANN, Zool. Anz. xxiii; *C. caudata*, Switzerland, p. 365, pl. xxiv, figg. 16-20, xxvi, figg. 17-23; KAUFMANN, Rev. Suisse Zool. viii: n. spp.
- Candonopsis kingsleyi*, p. 357, pls. xxiv, figg. 8-11, xxvi, figg. 1-9, xxxi, fig. 17; KAUFMANN, t. c.
- Cryptocandona*, n. g. defined for *vavrai*, Switzerland, p. 132; KAUFMANN, Zool. Anz. xxiii, n. sp.
- C. vavrai*, p. 361, pls. xxiv, figg. 12-15, xxvi, figg. 10-16; KAUFMANN, Rev. Suisse Zool. viii.
- †*Ctenobollina subcrassa*, Palaeozoic, High Bridge, Kentucky, p. 180, pl. viii, figg. 1-3, *obliqua*, Palaeozoic, Kenyon, Minn., p. 180, pl. viii, fig. 4, *spiculosa*, Devonian, Falls of the Ohio, p. 181, pl. viii, fig. 5, *armata*, Devonian, Falls of the Ohio, p. 181, pl. viii, fig. 6, *cavimarginata*, Devonian, Falls of the Ohio, p. 182, pl. viii, figg. 7-9, *insolens*, Devonian, Falls of the Ohio, p. 182, pl. viii, figg. 10 & 11, *granosa*, Lower Carboniferous, Mt. Pleasant, Tennessee, p. 184, pl. viii, figg. 15-18; ULRICH, J. Cincinnati Soc. xix, n. spp.
- †*Cuneocythere gibbosa*, p. 539, pl. xxi, fig. 10; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. sp.
- Cyclocypris levis*, p. 320, pls. xix, figg. 23-25, xxiii, figg. 9-12, xxix, fig. 17, *serena*, p. 325, pls. xix, figg. 21 & 22, xxiii, figg. 1-8, xxix, fig. 18, *globosa*, p. 327, pls. xxiii, figg. 13 & 14, xxix, fig. 19; KAUFMANN, Rev. Suisse Zool. viii.
- Cypria exsculpta*, p. 330, pls. xx, figg. 4-6, xxiii, figg. 17-27, xxxi, fig. 24, *ophthalmica*, p. 336, pls. xx, figg. 1-3, xxiii, figg. 15 & 16, xxix, fig. 20; KAUFMANN, t. c.
- Cypridopsis vidua*, p. 305, pl. xix, figg. 1-3, xxii, figg. 4-9, *helvetica*, p. 310, pls. xix, figg. 4 & 5, xxii, figg. 10 & 11; KAUFMANN, t. c.
- Cypridopsella*, nom. nov. for *Candonella Vávra*, *elongata*, *tumida*, Switzerland, p. 131; KAUFMANN, Zool. Anz. xxiii, n. spp.
- C. villosa*, p. 311, pls. xix, figg. 6-9, xxii, figg. 12-14, *tumida*, p. 313, pls. xix, figg. 10-13, xxii, figg. 15-19, *elongata*, p. 314, pl. xix, figg. 14 & 15, pl. xxii, figg. 20-23; KAUFMANN, Rev. Suisse Zool. viii.
- Cypria incongruens*, p. 264, pls. xv, figg. 10-12, xviii, 5, var. *elongata*, nov., p. 269, pl. xv, fig. 13, xviii, figg. 6-9, *fuscata*, p. 270, pl. xv, figg. 14-16,



- xviii, figg. 14-20, *affinis*, p. 272, pls. xv, figg. 17-20, xviii, figg. 10-13, xxxi, fig. 26, *ornata*, p. 275, pl. xxxi, figg. 1-5; KAUFMANN, Rev. Suisse Zool. viii.
- C. cribrum*, Roumania, p. 159, *unidentata*, Roumania, p. 160, *perforata*, Roumania, p. 160, *tridentata*, Roumania, p. 160; COSMOVICI, Bull. Soc. zool. France xxv, n. spp.
- Cyprois marginata*, p. 259, pls. xv, figg. 5-9, xvii, figg. 11-19, xviii, fig. 4, xxix, fig. 16; KAUFMANN, Rev. Suisse Zool. viii.
- +*Cytheridea tenuis*, p. 183, pl. xxvii, figg. 10-12, *perforata*, p. 183, pl. xxvii, figg. 61 & 62; EGGER, Abh. Bayer. Ak. xx.
- +*C. curvata*, p. 528, pl. xxi, fig. 2, *solida*, p. 528, pl. xxi, fig. 3; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. spp.
- +*Cytherideis parallela*, p. 186, pl. xxvii, figg. 18-20; EGGER, Abh. Bayer. Ak. xxi.
- +*Cythere jurinei*, p. 181, pl. xxvii, figg. 46 & 47, *harrisiana*, p. 181, pl. xxvii, figg. 38 & 39, *geinitzi*, p. 182, pl. xxvii, figg. 40-42; EGGER, t. c.
- +*Cythereis ornatissima*, p. 182, pl. xxvii, fig. 35; EGGER, t. c. *C. striatopunctata*, p. 512, pl. xix, fig. 7; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii.
- +*C. latorfiana*, p. 513, pl. xx, fig. 1, *scabella*, p. 514, pl. xx, fig. 2, *subcornuta*, p. 515, pl. xx, fig. 3, *spinosa*, p. 516, pl. xx, fig. 4, *angustatissima*, p. 518, pl. xx, fig. 5, *dubia*, p. 518, pl. xx, fig. 6, *posteroacuta*, p. 521, pl. xx, fig. 7, *saxonica*, p. 522, figg. in text, *laticarinata*, p. 523, pl. xxi, fig. 1; LIENENKLAUS, t. c., n. spp.
- +*Cytherella ovata*, p. 186, pl. xxvii, figg. 54-56, *subovata*, p. 187, pl. xxvii, figg. 51-53, *münsteri*, p. 187, pl. xxvii, figg. 48-50, *williamsoniana*, p. 188, pl. xxvii, figg. 63-65; EGGER, Abh. Bayer. Ak. xx.
- +*C. variopunctata*, p. 546, pl. xxii, fig. 8, *rugosa*, p. 546, pl. xxii, fig. 9, *biplicatula*, p. 546, pl. xxii, fig. 10, *undata*, p. 547, *rotundata*, p. 548, *confusa*, p. 548; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. spp.
- +*Cytheropteron concentricum*, p. 185, pl. xxvii, fig. 57, var. *virginica*, p. 185, pl. xxvii, figg. 43-45, *umbonatum*, p. 185, pl. xxvii, figg. 36 & 37; EGGER, Abh. Bayer. Ak. xxi.
- +*C. tricornis*, p. 541, pl. xxii, fig. 2, *orbiculare*, p. 542, pl. xxii, fig. 3, *sinuatum*, p. 542, pl. xxii, fig. 4, *triangulare*, p. 543, pl. xxii, fig. 5, *tricostatum*, p. 543, pl. xxii, fig. 6; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. spp.
- +*Cytherura aspera*, p. 540, pl. xxii, fig. 1; LIENENKLAUS, t. c., n. sp.
- Darwinula stevensoni*, p. 393, pls. xxix, figg. 6-14, xxx, figg. 19-23; KAUFMANN, Rev. Suisse Zool. viii.
- Dolerocypris*, n. g. def., p. 277, *fasciata*, p. 278, pls. xx, figg. 13-15, xxii, 1-3; KAUFMANN, t. c.
- +*Eucytherura echinata*, p. 544, pl. xxii, fig. 7; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. sp.
- Herpetocypris reptans*, p. 282, pls. xvi, figg. 1-3, xviii, figg. 21-26, var. *curvata*, nov., p. 285, pls. xvi, figg. 4 & 5, xviii, fig. 27, *brevicaudata*, p. 286, pls. xvi, figg. 6 & 7, xviii, figg. 28-31, *intermedia*, p. 288, pls. xvi, figg. 8 & 9, xxi, figg. 1-4, *peregrina*, p. 289, pls. xvi, figg. 10-12, xxi, figg. 5-8; KAUFMANN, Rev. Suisse Zool. viii.
- H. intermedia*, *brevicaudata*, Switzerland, p. 132; KAUFMANN, Zool. Anz. xxiii, n. spp.
- Ilyocypris gibba*, p. 343, pl. xx, figg. 16 & 17, var. *bicornis*, nov., p. 347, pls. xx, figg. 18 & 19, xxv, figg. 1-4, *lacustris*, p. 349, pls. xxiv, figg. 5-7, xxv, figg. 9-16, xxxi, fig. 25, *inera*, p. 352, pls. xxiv, figg. 3 & 4, xxv, figg. 5-8, *bradyi*, p. 353, pls. xxiv, figg. 1 & 2, xxv, figg. 17 & 18, *inermis*, p. 355, pls. xx, figg. 20 & 21, xxv, figg. 19-24; KAUFMANN, Rev. Suisse Zool. viii.

- I. iners, lacustris, inermis*, all from Switzerland, p. 133; KAUFMANN, Zool. Anz. xxiii, n. spp.
- Ilyodromus olivaceus*, p. 299, pls. xx, figg. 7-9, xxi, figg. 17-21; KAUFMANN, Rev. Suisse Zool. viii.
- †*Kirkbya cymbula*, Devonian, Falls of the Ohio, p. 184, pl. viii, figg. 15-18, *germana*, Devonian, Falls of the Ohio, p. 185, pl. viii, figg. 19-22; ULRICH, J. Cincinnati Soc. xix, n. spp.
- †*Leperditia hisingeri*, var. *angulata*, p. 11, pl. i, figg. 1-5, *baltica*, and vars., p. 17, pl. i, figg. 17-20, *phaseolus*, p. 20, pl. i, figg. 21-24, 27-29, var. *angelini*, nov., p. 22, pl. i, figg. 25 & 26, var. *lata*, nov., p. 23, pl. ii, figg. 30 & 31, var. *ornata*, p. 24, *gregaria*, p. 24, var. *coccinnella*, nov., p. 25, pl. ii, figg. 34 & 35, var. *tumulosa*, nov., p. 26, pl. ii, figg. 38 & 39, var. *conoidea*, nov., p. 26, pl. ii, fig. 43, var. *semigalliensis*, p. 27, pl. ii, figg. 44 & 45, *gigantea*, p. 28, var. *poniewieshensis*, p. 28, pl. ii, figg. 52-54, sp. cf. *tyraica*, p. 29, pl. ii, fig. 51; CHMIELEWSKI, Schr. Ges. Konigsb. xli.
- †*L. solitaria*, p. 47; BURR, Amer. Geol. xxv.
- †*L. lithuanica*, p. 13, pl. i, figg. 6-10, var. *intermedia*, p. 14, pl. i, figg. 11-14, *dossi*, p. 15, pl. i, figg. 15 & 16, *schellwieni*, p. 27, pl. ii, figg. 48-50; CHMIELEWSKI, t. c. n. spp.
- †*Loxocooncha subovata*, p. 183, pl. xxvii, figg. 7-9; EGGER, Abh. Bayer. Ak. xxi.
- †*L. ventricosa*, Tertiary, Germany, p. 530, pl. xxi, fig. 4; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. sp.
- †*Macrocypris wrighii*, p. 180, pl. xxvii, figg. 21 & 22; EGGER, Abh. Bayer. Ak. xxi.
- †*M. insignis*, Tertiary, Germany, p. 505, pl. xix, fig. 1; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. sp.
- Microcypris*, n. g. defined, for *reptans*, Switzerland, p. 132; KAUFMANN, Zool. Anz. xxiii, n. sp.
- M. reptans*, p. 301, pls. xvi, fig. 16-18, xxi, figg. 14-16; KAUFMANN, Rev. Suisse Zool. viii.
- Notodromas monacha*, p. 251, pls. xv, 1-4, xvii, 1-10, xviii, 1-3, xxix, 15; KAUFMANN, Rev. Suisse Zool. viii.
- Paracypridopsis*, n. g. defined for *zschokkei*, Switzerland, p. 131; KAUFMANN, Zool. Anz. xxiii, n. sp.
- P. variegata*, p. 316, pls. xix, figg. 16 & 17, xxii, figg. 24 & 25, *zschokkei*, p. 317, pls. xix, figg. 18-20, xxii, figg. 26-30; KAUFMANN, Rev. Suisse Zool. viii.
- †*Paracypris siliqua*, p. 179, pl. xxvii, figg. 16 & 17; EGGER, Abh. Bayer. Ak. xxi.
- †*Paracytheridea tuberosa*, Tertiary, Germany, p. 535, pl. xxi, fig. 9; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. sp.
- †*Paradoxostoma rectum*, p. 537, fig. 4 in text, *acutum*, p. 537, fig. 5 in text, Tertiary, Germany; LIENENKLAUS, t. c., n. spp.
- †*Pontocypris bosquetiana*, p. 180, pl. xxvii, figg. 23-25, *dactylus*, p. 180, pl. xxvii, figg. 26-28; EGGER, Abh. Bayer. Ak. xxi.
- †*P. ursula*, Cretaceous, Upper Bavarian Alps, p. 181, pl. xxvii, figg. 32-34; EGGER, t. c., n. sp.
- †*P. obtusa*, p. 506, pl. xix, fig. 2, *cypriformis*, p. 507, pl. xix, fig. 3, Tertiary, Germany; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. spp.
- Prionocypris serrata*, p. 292, pls. xx, figg. 10-12, xxi, figg. 22-26, *tumefacta*, p. 295, pls. xvi, figg. 13-15, xxi, figg. 9-13; KAUFMANN, Rev. Suisse Zool. viii.
- †*Pseudocythere bristovii*, p. 184, pl. xxv, figg. 54 & 55; EGGER, Abh. Bayer. Ak. xxi.
- †*Xestoleberis tumida*, p. 184, pl. xxvii, figg. 29-31; EGGER, t. c.
- †*X. muelleriana*, p. 531, pl. xxi, fig. 5, *brevis*, p. 532, pl. xxi, fig. 6, *sub-*

*globosa*, p. 533, pl. xxi, fig. 7, *obtusa*, p. 533, pl. xxi, fig. 8, Tertiary, Germany; LIENENKLAUS, Zeitschr. Deutsch. geol. Ges. lii, n. spp.

## CIRRIPIEDIA.

Consult:—BORRADAILE (16), GRUVEL (74-77), MARLOTH (102), ORTMANN (119), STEBBING (156), WELTNER (181).

*Balanus porcatus*, notes, p. 292, pl. viii, figg. 1-13, *hameri*, p. 298, pl. viii, figg. 14 & 15, notes; WELTNER, Fauna Arctica i.

*Dichelaspis lepadiformis*, hab. unknown, p. 109, *vaillanti*, Suez, p. 109, *maindroni*, Sumatra, p. 110, *coutieri*, Djibouti, p. 110, *aurivillii*, habitat unknown, p. 111, GRUVEL, Bull. Mus. Paris 1900, n. spp.

*Lepas denticulata*, Honda, Philippines, p. 241, GRUVEL, t. c., n. sp.

*Lithotrya pacifica*, Funafuti, p. 798, pl. li, figg. 3 & 3a; BORRADAILE, P. Z. S. 1900, n. sp.

*Scalpellum patagonicum*, Patagonia, p. 188, *edwardsi*, Atlantic, p. 189, *recurvitergum*, S.W. Azores, p. 190, *longirostrum*, Atlantic, p. 190, *atlanticum*, Azores, p. 190, *striatum*, E. of Azores, p. 191, *alatum*, Cape Cautin, p. 192, *luteum*, S.W. of the Azores, p. 192, *curvatum*, Azores, p. 193, *talismani*, Atlantic, p. 193; GRUVEL, Bull. Mus. Paris 1900, n. spp.

+*Scalpellum juliense*, San Julian, Patagonia, p. 377; ORTMANN, Amer. J. Sci. x, n. sp.

*Tubicinella trachealis*, mode of growth, p. 1; MARLOTH, Tr. S. African Soc. xi. *T. trachealis*, descr., p. 62; STEBBING, S. Afric. Crust.

*Verruca longicarinata*, Sargasso Sea, p. 242, *erecta*, Azores, p. 243, *linearis*, Azores, p. 243, *trisulcata*, Azores, p. 243, *striata*, Is. of Cape Verd, p. 244, *imbricata*, Atlantic, p. 244; GRUVEL, Bull. Mus. Paris 1900, n. spp.

## GIGANTOSTRACA

i.e., TRILOBITA, XIPHOSURA and EURYPTERIDA.

## I. TITLES.

1. BEECHER, C. E. Restoration of *Stylonurus lacoanus*, a Giant Arthropod from the Upper Devonian of the United States. Amer. J. Sci. x, pp. 145-150, pl. i.  
[Reprinted in Geol. Mag. 1900, vii, pp. 481-485, pl. xviii.]
2. BERGERON, J. Étude de quelques trilobites de Chine. Bull. Soc. geol. France xxvii, pp. 499-516, pl. xiii, and 9 figg. in text.
3. BURR, H. T. A new Lower Cambrian Fauna from Eastern Massachusetts. Amer. Geol. xxv, pp. 41-50.
4. MATTHEW, G. F. Studies on Cambrian Faunas, No. 3, Upper Cambrian Fauna of Mount Stephen, British Columbia.—The Trilobites and Worms. Tr. R. Soc. Canada v, pp. 39-66, pls. i-viii.
5. —. No. 4, Fragments of the Cambrian Faunas of Newfoundland, pp. 67-95, pls. i-viii. T. c. Section iv, 1899.

6. [MATTHEW, G. F.] The Etcheminian Fauna of Smith Sound, Newfoundland. T. c. pp. 97-119, pls. v-viii.
7. REED, F. R. C. Woodwardian Museum Notes: On the British species of the Genus *Conocoryphe*. Geol. Mag. vii, 1900, pp. 250-257.
8. —. Woodwardian Museum Notes: Salter's undescribed species. T. c. pp. 303-308.
9. SCHUCHERT, C. On the Lower Silurian (Trenton) Fauna of Baffin Land. P. U. S. Mus. xxii, pp. 143-177, pls. xii-xiv.
10. SCUPIN, H. Die Trilobiten des niederschlesischen Untercarbon. Zeitschr. Deutsch. geol. Ges. lii, pp. 1-20, pl. i.
11. THOMAS, H. H. Fossils in the Oxford University Museum, iv: Notes on some undescribed Trilobites. Quart. J. Geol. Soc. lvi, pp. 616-619, pls. xxxiv & xxxv.
12. WHITFIELD, R. P. & HOVEY, E. C. Catalogue of the Types and Figured Specimens in the Palaeontological collection of the Geological Department, American Museum of Natural History. Bull. Amer. Mus. xi, pp. 1-356.

## II. BIOLOGY.

Restoration of *Stylonurus lacoanus*; BEECHER (1).  
Notes on the British spp. of *Conocoryphe*; REED (7).

## III. DISTRIBUTION.

Palaeozoic. China: 2 n. gg. and 6 n. spp. of Trilobites; BERGERON (2).  
Cambrian. Newfoundland: *Trilobita*; MATTHEW (5).  
Lower Cambrian. E. Massachusetts: *Trilobita*; BURR (3).  
Upper Cambrian. British Columbia: *Trilobita* incl. 5 n. spp.; MATTHEW (4).  
Lower Silurian. Baffin Land; Trilobites incl. n. sp.; SCHUCHERT (9).  
Wenlock Shales. Malvern: 2 n. spp. Trilobites; THOMAS (11).  
Shinerton Shales. Shropshire: n. sp. of *Olenus*; THOMAS (11).  
Etcheminian. Smith Sound, Newfoundland: *Trilobita*; MATTHEW (6).  
Lower Carboniferous. Schleswig-Holstein: Trilobites incl. 4 n. spp.; SCUPIN (10).

## IV. SYSTEMATIC.

### TRILOBITA.

- †*Agnostus montis*, Upper Cambrian, British Columbia, p. 43, pl. i, fig. 6; MATTHEW, Tr. R. Soc. Canada v.  
†*A. donvillei*, Palaeozoic, China, p. 503, pl. xiii, fig. 3; BERGERON, Bull. Soc. geol. France xxvii, n. sp.  
†*Agraulus strenuus* var. *nasutus*, p. 46; BURR, Amer. Geol. xxv.  
†*Aptychopsis terranovicus*, Upper Limestone, Newfoundland, p. 118, pl. vii, figg. 5 & 6; MATTHEW, Tr. R. Soc. Canada v, Sect. iv.



- +*Arthricocephalus*, n. g. def. for *chauveaui*, Palaeozoic, China, p. 514, fig. 9 in text; BERGERON, Bull. Soc. geol. France xxvii, n. sp.
- +*Atops trilineatus*, Cambrian, Newfoundland, p. 89, pl. iv, fig. 8; MATTHEW, Tr. R. Soc. Canada v.
- +*Avalonia plana*, Cambrian, Newfoundland, p. 81, pl. iv, fig. 7; MATTHEW, t. c., n. sp.
- +*Bathyriscus pupa*, Upper Cambrian, British Columbia, p. 51, pl. ii, fig. 5; MATTHEW, t. c., n. sp.
- +*Calymene sinensis*, Palaeozoic, China, p. 500, pl. xiii, figg. 1 & 2; BERGERON, Bull. Soc. geol. France xxvii, n. sp.
- +*Conocephalites cf. perseus*, Upper Cambrian, British Columbia, p. 46, pl. ii, fig. 4; MATTHEW, Tr. R. Soc. Canada v.
- +*Corynexochus ramingeri*, Upper Cambrian, British Columbia, p. 47, pl. ii, fig. 3; MATTHEW, t. c., n. sp.
- +*Dalmanites goodridgii*, Lower Silurian, Baffin Land, p. 174, pl. xii, figg. 5 & 6; SCHUCHERT, P. U. S. Mus. xxii, n. sp.
- +*Dicelloccephalus sinensis*, Palaeozoic, China, p. 508, pl. xiii, fig. 7; BERGERON, Bull. Soc. geol. France xxvii, n. sp.
- +*Dolichometopus occidentalis*, Upper Cambrian, British Columbia, p. 49, pl. ii, fig. 2; MATTHEW, Tr. R. Soc. Canada v, n. sp.
- +*Dorypyge dawsoni*, Upper Cambrian, British Columbia, p. 56, pl. iii, fig. 1; MATTHEW, t. c.
- +*Drepanura*, n. g. def. for *premesnili*, Palaeozoic, China, p. 509, pl. xiii, fig. 8; BERGERON, Bull. Soc. geol. France xxvii, n. sp.
- +*Erinnys breviceps*, Cambrian, Newfoundland, p. 91, pl. iv, fig. 9; MATTHEW, Tr. R. Soc. Canada v.
- +*Griffithides damesi*, nom. nov. for *Archegonus æqualis*, p. 10, pl. i, fig. 7; SCUPIN, Zeitschr. Deutsch. geol. Ges. lii.
- +*G. frechi*, p. 12, pl. i, fig. 6, *depressus*, p. 13, pl. i, fig. 5, *claviger*, p. 14, pl. i, figg. 6 a, b, and 9, Lower Carboniferous, Schleswig-Holstein; SCUPIN, t. c., n. spp.
- +*Metadoxides magnificus*, p. 46; BURR, Amer. Geol. xxv. +*M. magnificus*, Cambrian, Newfoundland, p. 83, pl. viii, figg. 1a-c; MATTHEW, Tr. R. Soc. Canada v.
- +*Micmacca walcotti*, p. 79, pl. iv, figg. 5a-d, *angimargo*, p. 80, pl. iv, fig. 6, Cambrian, Newfoundland; MATTHEW, t. c., n. spp.
- +*Microdiascus cf. helena*, p. 47; BURR, Amer. Geol. xxv. +*M. bellimarginatus*, p. 75; MATTHEW, Tr. R. Soc. Canada v.
- +*Neolenus*, n. g. def. for *serratus* (= *Ogygia serrata* Roem.), p. 53; MATTHEW, t. c.
- +*N. granulatus*, Upper Cambrian, British Columbia, p. 55, pl. ii, figg. 1a-c; MATTHEW, t. c., n. sp.
- +*Neseuretus recurvatus*, p. 307, pl. xii, fig. 4, *quadratus*, p. 307, pl. xii, fig. 5, sp. ?, p. 308, pl. xii, fig. 6, Tremadoc, Ramsey Is.; REED, Geol. Mag. vii.
- +*Obolella atlantica*, p. 47, sp., p. 48; BURR, Amer. Geol. xxv.
- +*Olenellus broggeri*, p. 43, *asaphoides*, p. 45, sp., p. 45; BURR, t. c.
- +*Olenoides leblanci*, Palaeozoic, China, p. 506, pl. xiii, figg. 5 & 6; BERGERON, Bull. Soc. geol. France xxvii, n. sp.
- +*Olenus planti*, p. 303, pl. xii, fig. 1, *expansus*, p. 306, pl. xii, figg. 2 & 3, Upper Lingula Flags, Mocl. Gron; REED, Geol. Mag. vii.
- +*O. mitchinsoni*, Shineton Shales of Shineton, Shropshire, p. 619, pl. xxxv, figg. 5 & 6; THOMAS, Quart. J. Geol. Soc. lvi, n. sp.
- +*Orthotheca cylindrica*, p. 48; BURR, Amer. Geol. xxv.
- +*Oryctocephalus walkeri*, Upper Cambrian, British Columbia, p. 60, pl. iii, fig. 2; MATTHEW, Tr. R. Soc. Canada v, n. sp.
- +*Phacops coronatus*, Wenlock Shales, Malvern, p. 616, pl. xxxv, figg. 1-4, *nobilis*, Wenlock Shales, Brecknockshire, p. 617, pl. xxxiv, fig. 13; THOMAS, Quart. J. Geol. Soc. lvi.

- †*Phillipsiaca qualis*, p. 2, pl. i, figg. 10-12, *longicornis*, p. 5, *gemmaefera*, p. 6, *truncatula*, p. 7, pl. i, fig. 4, sp., p. 10; SCUPIN, Zeitschr. Deutsch. geol. Ges. lii.
- †*P. silesiaca*, Lower Carboniferous, Schleswig-Holstein, p. 8, pl. i, figg. 1-3; SCUPIN, t. c., n. sp.
- †*Pychoparia cordillerae*, Upper Cambrian, British Columbia, p. 44, pl. i, fig. 7; MATTHEW, Tr. R. Soc. Canada v.
- †*Strenuella strenua*, p. 76, pl. iv, fig. 3, *attleborensis*, p. 77, pl. iv, figg. 4a-c, Cambrian, Newfoundland; MATTHEW, t. c.

## EURYPTERIDA and XIPHOSURA.

- †*Stylonurus lacoanus*, restoration, p. 145; BEECHER, Amer. J. Sci. x.



# XI. ARACHNIDA.

BY

ALBERT WM. BROWN, B.A., F.L.S.

*Christ Church, Oxford.*

## CONTENTS.

	Page		Page
Introduction . . . . .	1	III. DISTRIBUTION. . . . .	10
I. TITLES . . . . .	2	IV. SYSTEMATIC.	
II. BIOLOGY.		Scorpiones . . . . .	14
1. Morphology . . . . .	8	Pedipalpi . . . . .	17
2. Embryology . . . . .	9	Aranæ . . . . .	17
3. Classification & Nomen- clature . . . . .	9	Solifugæ . . . . .	32
4. Habits & Biology . . . . .	9	Pseudoscorpiones . . . . .	32
5. Miscellaneous . . . . .	10	Opiliones . . . . .	32
		Acari . . . . .	33
		Tardigrada . . . . .	38

## INTRODUCTION.

Few general remarks need be made on the Record of Arachnida for 1900. There is a slight increase in the number of Titles, but these for the most part deal with descriptions of new or old species and do not therefore call for special mention. A study of the Distribution Section of this Record will show that considerable effort was spent on Palaearctic Arachnida during 1900, whilst a similar examination of the Systematic list will reveal the increasing attention devoted to orders other than the Aranæ and Acari. The Scorpions in particular are becoming a far better known group.

Pocock (74) makes certain criticisms on and mentions omissions from KRAEPELIN's Scorpiones in "Das Tierreich."

Pocock's volume on the Arachnida in "The Fauna of British India" seems to be the largest work of the year and is in every way an excellent monograph. It is much to be regretted that works of this type are not more common.

Considerable progress was made during the year with the second volume of "Arachnida Araneida" in the *Biologia Centrali-Americana*, whilst more plates of Volume I were issued. Volume II makes certain changes in the nomenclature and specific determinations of Volume I.

SIMON has published two lengthy and important papers on the *Attidæ*, preparatory to the publication of the next part of "Les Araignées" which will be recorded for the year 1901.

The Recorder much regrets having hitherto overlooked two parts (vii and viii) of CANESTRINI's "Prospetto dell' Acarofauna italiana," a work containing a number of papers by other specialists. He has further to call attention to an unfortunate error in the Geographical Section of the Record for 1897. The slips recording two of SIMON's papers for that year apparently got misplaced. The correction of the resulting errors will be found in the Distribution Section.

### I. TITLES.\*

1. [ANON.] Australian Ticks. *Amer. Micr. J.* xxi, pp. 123-127, Frontispiece.
2. —. Kako tkeu Tarantule zapredak? *Glasnik Naravosl. druzt. xi*, pp. 60 & 61.
3. APFELT, V. Studie o nervové soustavě Phalangiinů. *SB. Bohmisch. Ges.* 1900, pp. 38, 2 pls., figg. in text.
4. ARTAULT, S. Étude d'hygiène urbaine. Le Platane et ses méfaits. Un nouvel Acarien parasite accidentel de l'homme. *Arch. parasit.* iii, pp. 115-123, 2 figg. in text.
5. BANKS, N. Synopses of North American Invertebrates. ix. The Scorpions, Solpugids and Pedipalpi. *Amer. Natural.* xxxiv, pp. 421-427.
6. —. A list of Works on North American Entomology. *Bull. U. S. Dep. Agric. Ent.* No. 24, 1900, pp. 95. [Arachnida pp. 77-83.]
7. —. The Red Spiders of the United States. (*Tetranychus* and *Stigmaeus*.) *Bull. U. S. Dep. Agric. Ent. tech.* No. 8, 1900, pp. 65-77, 17 figg. in text.
8. —. On two genera of Mites. *Canad. Ent.* xxxii, pp. 30-33.
9. —. New North American Spiders. *T. c.* pp. 96-102.
10. —. New Genera and Species of American Phalangida. *J. N. York Ent. Soc.* viii, pp. 199-201.
11. —. Papers from the Harriman Alaska Expedition. xi. Entomological Results (5): *Arachnida*. *P. Washington Ac.* ii, pp. 477-486, pl. xxix.
- 11a. BAYERN, THERESE PRINZESSIN VON. In Sudamerika gesammelte Myriapoden und Arachnoideen. *Zool. Anz.* xxiii, pp. 279-286, 2 figg. in text [n. sp. of *Attidæ* descr. by PENTHER].
12. BRÜLA, A. Miscellanea scorpiologica. iv. Zur Synonymie der russischen Scorpione. *Annuaire Mus. St. Petersb.* v, pp. 248-256.

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

13. [BIRULA, A.] Beiträge zur Kenntniss der Scorpionenfauna Ost-Persiens. Bull. Ac. St. Petersb. xii, pp. 355-375.
  14. —. Ein Beitrag zur Kenntniss der Scorpionenfauna Kleinasiens. Horæ Soc. ent. Ross. xxxiii, pp. 132-140.
  15. BORELLI, A. Di alcuni scorpioni de Chile. Revist. chilena iv, pp. 61-66.
  16. BÖSENBERG, W. Die Spinnen der Rheinprovinz. Verh. Ver. Rheinland lvi, pp. 69-131, pl. i.
  17. BRUCKER, A. & TROUËSSART, E. Seconde note sur un Acarien marin (Halacaridé), parasite de l'*Acanthochiton porosus*. C.R. Soc. Biol. 1900, pp. 107-109.
  18. BUFFA, P. *Trombidium canestrinii*, n. sp., in CANESTRINI's Prospet. Acarof. Ital. viii, pp. 975-977, pl. c.
  19. CAMBRIDGE, F. O. P. *Arachnida Araneida*, vol. ii, pp. 89-192, pla. vii-xiii, in Godman's Biol. Centr.-Amer. Pts. CLIII-CLX, 1900.
  20. CAMBRIDGE, O. P. *Arachnida Araneida*, i, pla. xxxiv-xxxvi. In Biol. Centr.-Amer. Pts. CLVIII-CLX, 1900.
  21. —. List of British and Irish Spiders. Pp. 86, 8vo, Dorchester, 1900.
  22. CANESTRINI, G. Prospetto dell' Acarofauna italiana. Pt. VII, pp. 835-915, pls. 78-93, 1897; Pt. VIII, pp. 916-977, pls. 94-100, 1899, Padua, 8vo.
- [Contains papers by CANESTRINI, LEONARDI, COGGI, TIETZE, SICHER, and BUFFA.] The papers by CANESTRINI appear to be:—
23. —. Intorno all' ordine degli Idracari, pp. 835-843.
  24. —. Famiglia *Listrophoridae*, pp. 883-901, pls. 82-91.
  25. —. Famiglia *Canestrinidae*, pp. 902-910, pls. 78-81.
  26. —. Appendice alla Fam. *Psoroptidae*, p. 911.
  27. —. Famiglia *Demodicidae*, viii, pp. 956-970, pls. xcvii & xcvi.
  28. CARPENTER, G. H. Two Spiders new to the British Fauna. Ann. Nat. Hist. Ser. vii, vol. vi, pp. 199-204, 15 figg. in text.
  29. CASTELLI, G. Per una sinonimia osservazione sul *Philodromus generalii*, Canestrini. Boll. Nat. xx, pp. 18 & 19.
  30. —. Materiali per una fauna del Polesine (Prov. di Rodvigo). T. c. pp. 32-35.
  31. CHYZER, C. Scorpiones, pp. 2. In Fauna Regni Hungariæ iii.
  32. — & KULCZNSKI, L. Araneæ, pp. 33. T. c.
  33. COGGI, A. Nuovi Oribatidi italiani (con figure). Bull. Soc. ent. Ital. xxxii, pp. 309-324.
  34. —. Una n. sp. di *Oribatidae*. In CANESTRINI's Prospet. Acarof. Ital. viii, pp. 916-922, pl. xcv.
  35. DADAY, E. Pseudoscorpiones and Opiliones, pp. 6. In Fauna Regni Hungariæ iii.
  36. —. Tardigrada. T. c.
  37. EVANS, W. A contribution to the List of Perthshire Spiders. Tr. Perthsh. Soc. iii, pp. 88-96.

38. FOA, A. Esistono il polimorfismo e la partenogenesi nei Gamasidi? (Laboratorio di anatomia comparata della R. Università di Roma.) Bull. Soc. ent. Ital. 1900, pp. 121-149, 13 figg. in text.
39. JABLONOWSKI, J. Acarina, pp. 5. In Fauna Regni Hungariæ iii.
40. GEORGE, C. F. *Arrenurus ornatus*, n. sp. Sci. Gossip vii, pp. 204 & 205, figg. in text.
41. GIARD, A. Sur un nouveau Tyroglyphide (*Trichotarsus manicati*, n. sp.) parasite d'*Anthidium manicatum*, L., et sur le genre *Trichotarsus*. Bull. Soc. ent. France 1900, pp. 375-377.
42. HALBERT, J. N. A new Water Mite from Ulster. Irish Natural. ix, pp. 94-96, 4 figg. in text.
43. HARRIS, G. T. & SOAR, C. D. Pond-life in the New Forest. Sci. Gossip vii, pp. 132 & 133.
44. VAN HASSELT, A. W. M. De beteekenis der Spinnen. Tijdschr. Ent. xliii, pp. 200-222.
45. HOGG, H. R. A contribution to our Knowledge of the Spiders of Victoria: including some New Species and Genera. P. Soc. Victoria xiii, pp. 68-123, pls. xiii-xvii.
46. KOENIKE, F. Zur Kenntniss wenigbekannter *Sperchon*-Arten. Nyt Mag. Naturv. xxxviii, pp. 283-300, pl. xii.  
KULCZNSKI. [See CHYZER & KULCZNSKI (32).]
47. LAMY, E. Note sur l'appareil respiratoire trachéen des Aranéides. Bull. Soc. ent. France 1900, pp. 267-270.
48. LEONARDI, G. Storia naturale degli Acari insetticoli. Bull. Soc. ent. Ital. xxxii, pp. 1-12.
49. —. Notizie intorno agli Acaroidei vivente nei Formicai. In CANESTRINI's Prospet. Acarof. Ital. vii, pp. 845-882, pls. xcii & xciii.
50. —. Nuova specie di Acari trovati a Portici. Op. cit. viii, pp. 922-928, figg. in text.
51. LEWIS, R. T. A contribution to the Life History of *Ixodes reduvius* (Linn.). J. Quekett Club, Ser. 2, vol. vii, pp. 381-386, pl. xxi.
52. LONGLEY, C. W. Notes on Spiders. Derby. Nat. Quart. i, pp. 83-86. [Miscellaneous Notes on Habits, etc.]
53. LONNBERG, E. On the Scorpions obtained during the Swedish Expedition to Tierra del Fuego, 1895. Ergeb. Schwedisch. Exped. Magellansl., Band ii, Zoologie, pp. 45-48.
54. LOUNSBURY, C. P. Notes on some South African Ticks. Bull. U. S. Dep. Agric. Ent. xxvi, pp. 41-49.
55. —. Insect Bites and the Effects thereof. Canad. Ent. xxxii, pp. 17-24.
56. —. Life History of a Tick. Ent. News Philad. xi, pp. 336-340.
57. MICHAEL, A. D. Report on the Acari collected. Contributions to the Natural History of Lake Urmi, N.W. Persia, and its neighbourhood. (Edited by Gunther, R. T.) J. Linn. Soc. xxvii, p. 407, pl. xxvii.
58. NALEPA, A. Diagnose d'*Eriophyes passerinæ*, nov. sp. Bull. Sci. France Belgique xxxiii, pp. 455-457, figg. in text.
59. —. Zur Kenntniss der Gattung *Eriophyes*. Denk. Ak. Wien lxxviii, pp. 201-218, pls. i-v.

- 59A. NORDENSKIÖLD, E. Beiträge zur Kenntnis der Anatomie von *Norneria gigas* R. Can. Acta Soc. Sci. Fenn. xxvi, Art. 6, pp. 24 & pl.
60. OUDEMANS, A. C. Further Notes on *Acari*. Tijdschr. Ent. xliii, pp. 109-128, pls. v & vi.
61. —. Bemerkungen über Sanremeser *Acari*. T. c. pp. 129-139, pls. vii & viii.
62. —. Remarks on the denomination of the genera and higher groups in "Das Tierreich, *Oribatida*." T. c. pp. 140-149.
63. —. New List of Dutch *Acari*. T. c. pp. 150-171.
64. —. Zwei neue Acariden. Zool. Anz. xxiii, pp. 89-91.
65. PENTHER, A. Zur Kenntniss der Arachnidenfauna Südafrikas (*Scorpiones*). Ann. Hofmus. Wien xv, pp. 153-163, 2 figg. in text.
66. PIERSIG, R. Deutschlands Hydrachniden. Bibl. Zool., Heft. xxii, pp. 401-500, pls. xlv-li. [Zoologia vol. ix.]
67. —. Hydrachnologische Bemerkungen. Zool. Anz. xxiii, pp. 209-213.
68. Pocock, R. I. The Fauna of British India, including Ceylon and Burma. *Arachnida*. Published under the authority of the Secretary of State for India in Council. Edited by W. T. Blanford. London, 8vo, pp. xii & 279, 89 figg. in text.
69. — in Gosse, P. Notes on the Natural History of the Aconcagua Valley. Appendix c in A. E. Fitzgerald's "The Highest Andes" pp. 338-376, figg. in text. iv. Scorpions and spiders, pp. 356-360, pl.
70. —. *Chilopoda*, *Diplopoda* and *Arachnida*, pp. 153-162, pl. xvi. In Andrews, C. W., A Monograph of Christmas Island (Indian Ocean), London, 8vo, 1900.
71. —. Some new or little known *Thelyphonida* and *Solifugæ*. Ann. Nat. Hist. Ser. 7, v, pp. 294-306, 8 figg. in text.
72. —. Some New or Little-known Neotropical Scorpions in the British Museum. T. c. pp. 469-478.
73. —. Some new *Arachnida* from Cape Colony. Op. cit. vi, pp. 316-333.
74. —. The Scorpions of the Genus *Heterometrus*. T. c. pp. 362-365.
75. —. Some new Theraphosid Spiders in the British Museum. T. c. pp. 489-494, 2 figg. in text.
76. —. The Great Indian Spiders. J. Bombay Soc. xiii, pp. 121-133, pl. A.
77. —. Contributions to the Natural History of Lake Urmi, N.W. Persia, and neighbourhood. Report on the *Chilopoda* and *Arachnida* collected. J. Linn. Soc. xxvii, pp. 399-406, pl. xxvi. (Edited by Gunther, R. T.)
78. —. On a Collection of Insects and Arachnids made in 1895 and 1897, by Mr C. A. V. Peel, F.Z.S., in Somaliland, with descriptions of New Species. ix. The *Chilopoda* and *Arachnida*, P. Z. S. 1900, pp. 48-55, pls. iii & iv.
79. —. x. General List of the Scorpions of Somaliland and the Borean Country. T. c. pp. 55-63, pl. iv.
80. —. Rare English Ticks. Zoologist lviii, pp. 326 & 327.



81. PROTZ, A. Neue Hydrachnidenformen aus Ostpreussen. Zool. Anz. **xxiii**, pp. 598-600, 4 figg. in text.
82. RAINBOW, W. J. Descriptions of some new *Araneida* of New South Wales, No. 9. P. Linn. Soc. N. S. Wales **xxv**, pp. 483-494, pls. **xxiii** & **xxiv**.
83. —. Two new Thomisids. Rec. Austral. Mus. **iii**, pp. 169-175, pl. **xxx**.
84. ROBERTSON, E. H. Palpi of Male Spiders. Sci. Gossip **vi**, pp. 259 & 260.
85. ROSTRUP, S. Grønlandske Phytoptider. Vid. Medd. 1900, pp. 241-249, pl. **ii**.
86. SARGENT, A. B. Preliminary Notes on the Rate of Growth and on the Development of Instincts in Spiders. P. Ac. Philad. 1900, pp. 395-411, pls. **ix** & **x**.
- 86A. SCHÖNICHEN. *Antennophorus uhlmanni*. Zeitschr. Naturw. **lxxi**, pp. 145 & 146.
87. SHERBORN, C. D. An Index to the Generic and Trivial Names of Animals described by Linnaeus in the xth and xiith editions of his *Systema Naturae*. Manchester Museum Handbooks. Publ. **xxv**, pp. 108. Manchester, 8vo, 1899.
88. SICHER, E. Note Acarologique della Sicilia. In CANESTRINI's *Prospet. Acarof. Ital.* **viii**, pp. 971-974, pl. **xcix**.
89. SIMON, E. *Arachnida*. In *Fauna Hawaïensis* or the Zoology of the Sandwich (Hawaiian) Isles: being Results of the Explorations instituted by the Joint Committee appointed by the Royal Society of London for promoting Natural Knowledge and the British Association for the Advancement of Science and carried on with the Assistance of those Bodies and of the Trustees of the Bernice Pauahi Bishop Museum at Honolulu. Edited by David Sharp. Vol. **ii**, Pt. **v**, pp. 443-519, pls. **xv-xix**.
90. —. Studio sui Chernetes italiani conservati nel museo civico di Genova. Ann. Mus. Genova **xl**, pp. 593-595.
91. —. Chernetes recueillis en Erythrée par le Lieutenant F. Derchi en 1896. T. c. p. 596.
92. —. Descriptions d'Arachnides nouveaux de la famille des *Attidæ*. Ann. Soc. ent. Belgique **xliv**, pp. 381-407.
93. —. Études arachnologiques. 30<sup>e</sup> Memoire. **xlvi**, Descriptions d'espèces nouvelles de la famille des *Attidæ*. Ann. Soc. ent. France **lxix**, pp. 27-61.
94. —. Liste des Arachnides recueillis à Uclès (Espagne) par le P. J. Pantel. Bull. Soc. ent. France 1900, pp. 44 & 45.
95. —. Note sur le *Conothele birmanica*, Thorell. T. c. p. 151.
96. —. Note complémentaire sur le *Conothele birmanica*, Thorell. T. c. p. 219.
97. —. Liste des Arachnides recueillis par M. Ch. E. Porter en 1898-1899 et descriptions d'espèces nouvelles. Revist. chilena **iv**, pp. 49-55.
98. SMITH, F. P. Spiders from Hastings. Sci. Gossip **vii**, pp. 106 & 107.
99. —. An Introduction to British Spiders. Op. cit. **vi**, pp. 239 & 240, 308-310, 328-330, 360 & 361, **vii**, pp. 14-16, 45-47, 138-140, 166 & 167, 206 & 207.

100. SOAR, C. D. A List of Fresh-water Mites found near Oban, N.B. J. Quekett Club, Ser. ii, vol. vii, pp. 391-394.
101. —. British Fresh-water Mites. Sci. Gossip vi, pp. 233 & 234, 260 & 261, 302 & 303, 337 & 338, 363-365, vii, 18 & 19, 48 & 49, 84-86, 203-205.  
— [See HARRIS & SOAR (43).]
102. STRAND, E. Arachnologisches. Nyt. Mag. Naturv. xxxviii, pp. 95-102.
103. —. Drei neue Xysticus-Arten. Zool. Anz. xxiii, pp. 366-372.
104. TARNANI, J. Deux nouvelles espèces de Thelyphonides. T. c. pp. 481 & 482.
105. THON, C. K. Über die Copulations-Organ der Hydrachniden-Gattung *Arrhenurus* Dugès. Ver. Deutsch. zool. Ges. 1900, pp. 108-129, figg. in text.
106. —. Příspěvky ku poznání českých vodulí (*Hydrachnida*). I. Nový rod vodulí z Čech (*Albia*). Rozp. Ceske Ak. Praze viii, Art. 34, pp. 5, 1 pl.
107. —. II. Monographie českých druhů rodu *Hydryphantus* C. L. Koch. T. c. Art. 45, pp. 38, 2 pls., 5 figg. in text.
108. THOR, S. Prodrömus Systematis Hydrachnidarum. Nyt Mag. Naturv. xxxviii, pp. 263-266.
109. —. Hydrachnologische Notizen, i-iii, pp. 267-279, pls. x & xi, iv-viii, pp. 369-388, pls. xvi-xviii. T. c.
110. THORELL, T. Aranearum Camerunenses (Africae occidentalis) quas anno 1891 collegerunt al Dr Y. Sjöstedt alique et enumeravit T. Thorell. Bih. Svenska Ak. xxv, Art. i, pp. 105.
111. TIETZE, F. Contributi all' acarologia d'Italia. Osservazioni sull' Acarofauna del litorale di Malamocco (Venezia). In CANESTRINI'S Prospet. Acarof. Ital. viii, pp. 929-955, pls. xciv & xcvi.
112. TREGEAR, E. A name for a Spider. Tr. N. Zealand Inst. xxxii, pp. 298-304.
113. TROTTER, A. Description de deux nouveaux *Eriophyes* de Chine. Bull. Soc. ent. France 1900, pp. 179-181.
114. —. Description d'une espèce nouvelle d'*Eriophyes* de l'Amerique du Sud. T. c. pp. 224-226, fig. in text.
115. TROUESSART, L. Description d'espèces nouvelles d'*Halacarida* par le Dr Trouessart et description d'un genre nouveau par MM. Brucker et Trouessart. Bull. Soc. zool. France xxv, pp. 38-43.
116. —. Note préliminaire sur les Acariens marins (*Halacarida*) recueillis aux Açores par S. A. le Prince de Monaco (Campagnes de 1886-1888). T. c. pp. 44-47.
117. —. Description d'espèces nouvelles d'*Halacarida* par le Dr Trouessart et description d'un genre nouveau par MM. Brucker et Trouessart. Bull. Soc. Angers xxix, pp. 209-234.
118. —. Note préliminaire sur les Acariens marins (*Halacarida*) recueillis aux Açores par S. A. le Prince de Monaco. (Campagnes de 1886-1888.) T. c. pp. 229-234.

119. [TROTTER, A.] Faux parasitisme d'une espèce de Sarcoptide détriticoles (*Histiogaster spermaticus*, n. sp.), dans un kyste du testicule chez l'homme. C.R. Soc. Biol. 1900, pp. 742-744.
- 119A. —. Deuxième note sur l'*Histiogaster spermaticus* et sa présence dans un kyste du testicule chez l'homme. T. c. pp. 893 & 894.  
— [See BRUCKER & TROUËSSART (17).]
120. TULLGREN, A. Two new Species of *Chelonethi* (Pseudoscorpions) from America. Ent. Tidskr. xxi, pp. 153-157, 2 figg. in text.
121. —. *Chelonethi* (Pseudoscorpions) from the Canary and the Balearic Islands. T. c. pp. 157-160, fig. in text.
122. WAGNER, W. L'araignée aquatique (*Argyroneta aquatica*, CL.) son industrie et sa vie. Matériaux de psychologie comparée. Bull. Soc. Moscou 1900, pp. 61-169, 1 pl.
123. WALLACE, L. B. The Accessory Chromosome in the Spider. Anat. Anz. xviii, pp. 327-329, figg. in text.
124. WARBURTON, C. On a remarkable Attid Spider from Borneo, *Mantisatta trucidans*, n. g. et sp. P. Zool. Soc. London 1900, p. 384-387, 4 figg. in text.
125. WASMANN, E. Neue Dorylinengäste aus dem neotropischen und dem aethiopischen Faunengebiet. (114. Beitrag zur Kenntniss der Myrmekophilen und Termitophilen.) Zool. Jahrb. Syst. xiv, pp. 215-290, pls. xiii & xiv.
126. WESTBERG, P. Aus dem Leben der Spinnen. KB. Ver. Riga xliii, pp. 69-130.
127. WHEELER, W. M. A Singular Arachnid (*Kanenia mirabilis*, Grassi) occurring in Texas. Amer. Natural. xxxiv, pp. 837-850, 4 figg. in text.
128. WHITE, T. A Hunting Spider. Tr. N. Zealand Inst. xxxii, pp. 406 & 407.
129. —. Arachnids: the Small Pond in the Forest. T. c. pp. 408 & 409.
130. WOLCOTT, R. H. New Genera and Species of North American *Hydrachnida*. Tr. Amer. Micr. Soc. xxi, pp. 177-200, pls. ix-xii. [Issued also reprinted as Stud. Univ. Nebraska, No. 34.]
131. WOODRUFFE-PEACOCK, E. A. Some Insects and Spiders from Ingham, Lincolnshire. Naturalist 1900, pp. 43 & 44. (List of Spiders, p. 44.)

## II. BIOLOGY.

### 1. *Morphology.*

- Anatomy of *Norneria gigas*; NORDENSKIÖLD (59A).  
 Structure of the Red Spiders of the United States; BANKS (7), p. 67.  
 Nervous System of *Phalangida*; APPELT (3).  
 Tracheal system of *Araneæ*; LAMY (47).  
 Palpi of Male Spiders; ROBERTSON (84).  
 Observations on structure of the ♂ rostrum of *Ixodes redurius* as a copulatory organ; LEWIS (51).

Copulatory organs of *Arrenurus*; THON (105).  
*Kenenia mirabilis*, structure, p. 837; WHEELER, Amer. Natural. xxxiv.  
 Polymorphism amongst *Gamasidae*; FOA (38).

## 2. Embryology.

Egg of *Oribatida*, p. 31, pl. v; RICHTER, Ber. Senckenberg. Ges. 1900.  
 Parthenogenesis amongst *Gamasidae*; FOA (38).  
 Copulation in *Ixodes reduvius*; LEWIS (51).  
 Life History of *Amblyomma hebraeum*; LOUNSBURY (56).  
 The Accessory Chromosome in the Spider; WALLACE (123).

## 3. Classification and Nomenclature.

*Scorpiones*. Order characterised, discussed, and classified, pp. 5-12; POCOCK (68).

*Pedipalpi* divided into two orders *Uropygi* and *Amblypygi*.—*Uropygi*, discussed, p. 100, suborders def. and discussed, pp. 101 & 118.—*Amblypygi* order discussed, p. 123; POCOCK (68).

*Idracnidi*, characteristics and subdivisions of the group discussed, etc.; CANESTRINI, p. 835, Prospet. Acarof. Ital. vii.

Classification of *Hydrachnida*; THOR (108).

Account of the Italian spp. of *Listrophoridae*; CANESTRINI (24), *Canestrini*; CANESTRINI (25), *Demodicidae*; CANESTRINI (27).

The genus *Eriophyes*; NALEPA (59).

Key to spp. of *Trichotarsus*, p. 375; GIARD (41).

Table of British spp. of *Cnephalocotes*, p. 203; CARPENTER (28).

Correction of key to *Surcoptidae* published in "Das Tierreich," p. 121; OUDEMANS (60).

Correction of key to g. *Scutovortex* (*Acari*) published in "Das Tierreich," p. 121; OUDEMANS (60).

Criticisms on the nomenclature and classification of *Scorpiones* and notes on omission of certain spp. from "Das Tierreich"; POCOCK (74).

Synonymy of Russian Scorpions; BIRULA (12).

Synonymy of *Philodromus generalii*; CASTELLI (29).

Changes in nomenclature of the *Oribatida*; OUDEMANS (62).

Names for "Spider"; TREGGAR (112).

Linnean names of *Arachnida*; SHERBORN (87).

N.B. All special cases of changes of names of genera and species are enumerated in their places in IV. Systematic.

## 4. Habits and Biology.

Growth and Development of Instincts in Young Spiders; SARGENT (86).

Biology and Habits of *Argyroneta aquatica*; WAGNER (122).

Biology of Spiders; WESTERG (126).

Biology of *Acari*; LEONARDI (48).

Method of fixing itself to host of *Agave chitonis*, p. 107; BRUCKER & TROUSSART (17).

Accidental parasitism in Man of a Phytoparasitic Acarid; ARTAULT (4).

List of the *Acari* commensal with or parasitic on Ants; LEONARDI, p. 848, in CANESTRINI'S Prospet. Acarof. Ital. vii.

Nesting Habits of *Theridion lineatum*, p. 105; WILLANS, Tr. Scottish Nat. Hist. Soc. i, 1900.

- Habits of *Pacilotheria*; POCKOCK (76).  
 Habits of *Kanenia mirabilis*, p. 248; WHEELER (127).  
 Habits of Spiders; LONGLEY (52).  
 Habits of S. African Ticks; LOUNSBURY (54).  
 Habits of the Red Spiders of the United States; BANKS (7), p. 69.  
 A Hunting Spider; WHITE (128).  
 Bites of *Arachnida*; LOUNSBURY (55).

### 5. *Miscellaneous.*

- Evolution of certain spp. of *Acari*; TIETZE (111), p. 934.  
 Preparation of *Acari* for examination; TIETZE, p. 935 (111).  
 Geographical distribution of certain Italian *Acari*, pp. 931-934; TIETZE (111).

## III. DISTRIBUTION.

### *Palæarctic Region.*

#### i. DISTRIBUTION OF THE NEW SPECIES.

- Europe: n. sp. of *Eriophyes*; NALEPA (58).  
 Greenland: *Acari*, 3 n. spp. of *Phytoidæ*; ROSTRUP (85).  
 Finland: n. sp. of *Scutovertex*; OUDEMANS (60).  
 Norway: 3 n. spp. of *Hydrachnidæ*; THOR (109).  
 Skarmodal: *Aranææ*, n. sp. of *Drassus*; STRAND (102): 2 n. spp. of *Xysticus*; STRAND (103).  
 Nadelholz: *Aranææ*, n. sp. of *Xysticus*; STRAND (103).  
 Kasnakow: n. sp. of *Thelyphonidæ*; TARNANI (104).  
 England: n. sp. of *Arrenurus*; GEORGE (40).  
 Lancashire: n. sp. of *Agalena*; CARPENTER (28), p. 199.  
 Ulster: n. sp. of *Arrenurus*; HALBERT (42).  
 Holland: n. sp. of *Notaspis*; OUDEMANS (63).  
 Marseilles: n. subsp. of *Hulacaridæ*; TROUËSSART (115, 117).  
 Wimereux: n. sp. of *Trichotarsus*; GIARD (41).  
 E. Prussia: 3 n. spp. of *Hydrachnidæ*; PROTZ (81).  
 Province of the Rhine: 9 n. spp. of Spiders; BOSENBERG (16).  
 Trentine Alps: n. sp. of *Trombidium*; BUFFA (18).  
 Italy: 4 n. spp. of *Oribatidæ*; COGGI (33).—4 n. spp. of *Acari* commensal with Ants; LEONARDI (49).—2 n. spp. of *Acari*; TIETZE (111).  
 San Remo: 2 n. spp. of *Notaspis*; OUDEMANS (64): 2 n. spp. of *Acari*; OUDEMANS (61).  
 Macognaya near Monte Rosa: n. sp. of *Camisia*; OUDEMANS (60).  
 Portici: 5 n. spp. of *Acari*; LEONARDI (50).  
 Bologna: n. sp. of *Notaspis*; COGGI (34).  
 Sicily: *Acari*, n. sp. of *Glyciphagus*; SICHER (88).  
 Hungary: n. g. and 2 n. spp. of *Hydrachnidæ*; THON (106 & 107).  
 Asia Minor: n. sp. of *Euscorpius*; BIRULA (14).  
 Astracan: *Scorpiones*, n. sp. of *Buthus*; POCKOCK (77).  
 E. Persia: n. sp. and 5 n. subsp. of *Scorpiones*; BIRULA (13).  
 Seir: *Scorpiones*, n. subsp. of *Buthus*, *Aranææ*, n. sp. of *Lycosa*; POCKOCK (77).  
 Lake Urmí: n. sp. of *Galeodes*; POCKOCK (77).

Teneriffe: *Pseudoscorpiones*, n. sp. of *Garypus*; TULLGREN (121).

China: *Acari*, 2 n. spp. of *Eriophyes*; TROTTER (113).

Japan: 3 n. spp. of *Acari*; OUDEMANS (60).

2 n. spp. of *Holostaspis*; FOA (38).

## ii. LOCAL FAUNÆ.

Greenland: *Acari*, *Phytoptida*; ROSTRUP (85).

Vegesack: *Acari*; OUDEMANS (60), p. 121.

Holland: *Acari*; OUDEMANS (63).

Great Britain: *Araneæ*; CAMBRIDGE, O. (21).—*Araneæ*; SMITH (99).—

Rare *Acari*; POCOCK (80).—*Hydrachnida*; SOAR (101).

Perthshire: *Araneæ*; EVANS (37).

Oban: *Hydrachnida* with *Acerus ligulifer* and *Torrenticolor anomala* recorded for the first time in Britain; SOAR (100).

Lancashire: *Cnephalocotes*; CARPENTER (28), pp. 201 & 203.

Grantham: *Phalangida* and *Araneæ*; WOODRUFFE-PEACOCK (131), p. 79.

New Forest: *Hydrachnida*; HARRIS & SOAR (43).

Hastings: *Araneæ*; SMITH (98).

Ireland: *Araneæ*; CAMBRIDGE, O. (21).

Germany: *Hydrachnida*; PIERSIG (66).

Bremen: *Acari*, p. 114; OUDEMANS (60).

Uclès (Spain): *Arachnida*; SIMON (94).

Polesine (Rodvigo): *Arachnida*; CASTELLI (30).

Italy: *Pseudoscorpiones*; SIMON (90).—*Acari* in Ants' nests; LEONARDI (49).—*Acari*; TIETZE (111).

San Remo: *Acari*; OUDEMANS (61).

Malamocco (Venice): *Acari*; TIETZE (111).

Hungary: *Scorpiones*; CHYZER (31).—*Araneæ*; CHYZER & KULCZENSKI (32).—*Pseudoscorpiones* and *Opiliones*; DADAY (35).—*Acari*; GABLONOWSKI (39).—*Hydrachnida*; THON (106 & 107).—*Tardigrada*; DADAY (36).

Canary and Balearic IIs.: *Chelonethi*; TULLGREN (121).

Azores: *Halacarida*; TROUESSART (116 & 118).

Asia Minor: *Scorpiones*; BIRULA (14).

E. Persia: *Scorpiones*; BIRULA (13).

Lake Urmi: *Acari*; MICHAEL (57).

## Ethiopian Region.

### i. DISTRIBUTION OF THE NEW SPECIES.

Cameroons: 97 n. spp. (incl. some n. gen.) of *Araneæ*; THORELL (110).—n. sp. of *Jotus*; THORELL, Bih. Svenska Ak. xxv.

Congo: *Araneæ*, n. sp. of *Attida*; SIMON (92): n. sp. of *Attida*; SIMON (93).

Erythræa: *Pseudoscorpiones*, n. sp. of *Chelifer*; SIMON (91).

Kinani, E. Africa: *Araneæ*, n. g. of *Theraphosida*; POCOCK (75).

Djibouti: 4 n. spp. and n. subsp. of *Halacarida*; TROUESSART (117).

Somaliland: n. sp. of *Solifuga*; POCOCK (71): 2 n. spp. of *Acari*;

5 n. spp. of *Scorpiones*, n. subsp. of *Scorpiones*; POCOCK (78 & 79).

Mashonaland: 2 n. spp. of *Solifuga*; POCOCK (71).

Little Namaqualand: n. sp. of *Solifuga*; POCOCK (71).

Transvaal: *Araneæ*, n. sp. of *Attida*; SIMON (92).

Natal: *Araneæ*, 4 n. spp. of *Attidæ*; SIMON (92): n. sp. of *Attidæ*; SIMON (93).

Cape Colony: 2 n. spp. of *Solifugæ*, 33 n. spp. incl. 3 n. gg. of *Araneæ*; Pocock (73).

Cape of Good Hope: *Araneæ*, n. sp. of *Attidæ*; SIMON (92).

S. Africa: 6 n. spp. of *Scorpiones*; PENTHER (65).

Nossibé: *Araneæ*, 2 n. spp. of *Attidæ*; SIMON (92).

Madagascar: *Araneæ*, *Attidæ*, 9 n. spp.; SIMON (92): n. sp. of *Attidæ*; SIMON (93).

Diego-Suarez: *Araneæ*, n. sp. of *Attidæ*; SIMON (92).

Mauritius: *Araneæ*, n. sp. of *Attidæ*; SIMON (92).

Arabia: n. sp. of *Scorpiones*; Pocock (74), p. 363.

Bushire, Persian Gulf: *Scorpiones*, n. sp. of *Heterometrus*; Pocock (74), p. 364.

## ii. LOCAL FAUNÆ.

Somaliland: *Scorpiones*; Pocock (79).

## *Neartic Region.*

### i. DISTRIBUTION OF THE NEW SPECIES.

N. America: 2 n. spp. of *Phalangida*; BANKS (10): 12 n. spp. of Spiders; BANKS (9).

Alaska: 4 n. spp. of *Araneæ*, n. sp. of *Phalangida* and n. sp. of *Acari*; BANKS (11).

U.S.A.: 5 n. spp. of *Tetranychus*, n. sp. of *Stigmæus*; BANKS (7).

Michigan Lakes: 3 n. gg. and 4 n. spp. of *Hydrachnidæ*; WOLCOTT (130).

Florida: *Pseudoscorpiones*, n. sp. of *Atemnus*; TULLGREN (120).

## ii. LOCAL FAUNÆ.

N. America: *Scorpiones*, *Pedipalpi* and *Solifugæ*; BANKS (5).

Alaska: *Arachnida*; BANKS (11).

United States: *Tetranychus* and *Stigmæus*; BANKS (7).

## *Neotropical Region.*

### i. DISTRIBUTION OF THE NEW SPECIES.

St Thomas Is.: *Araneæ*, 3 n. spp. of *Theraphosidæ*; Pocock (75).

Las Palmas: *Araneæ*, 2 n. spp.; SIMON (97).

México: n. g. and 3 n. spp. of *Phalangida*; BANKS (10).—3 n. spp. of *Ctenus*, n. sp. of *Selenops*, n. sp. of *Pseudoscorpioninus*, 3 n. spp. of *Sparassus*, n. sp. of *Martella*, 4 n. spp. of *Lyssomanes*; CAMBRIDGE, F. (19).

Guatemala: 2 n. spp. of *Clubiona*, 4 n. spp. of *Anypheana*, n. sp. of *Aysa*, n. sp. of *Teudis*, 2 n. spp. of *Sillus* (n. g.), n. sp. of *Wulfla*, 5 n. spp. of *Ctenus*, n. sp. of *Selenops*, n. sp. of *Sparassus*, n. sp. of *Misumenoides* (n. g.), 2 n. spp. of *Misumenops* (n. g.), 5 n. spp. of *Lyssomanes*; CAMBRIDGE, F. (19).—*Thelyphonidæ*, n. sp. of *Mastigoproctus*; Pocock (71).

Costa Rica: 2 n. spp. of *Ctenus*, 2 n. spp. of *Cobanus*; CAMBRIDGE, F. (19).

Panama: n. sp. of *Anyphaena*, n. sp. of *Aysa*, n. sp. of *Toudia*, n. sp. of *Sillus* (n. g.), n. sp. of *Celatycheus*, n. sp. of *Paratobias* (n. g.), n. sp. of *Toxus*, n. sp. of *Synageles*, n. sp. of *Lyssomanes*; CAMBRIDGE, F. (19).

S. America: *Acari*, n. sp. of *Eriophyes*; TROTTER (114).—2 n. spp. of *Myrmecophilous Acari*; WASMANN (125).

Colombia: n. sp. of *Euophrys*; PENTHER (in 11A), p. 285.

Ecuador: *Araneæ*, n. sp. of *Attidæ*; SIMON (93).—3 n. spp. of *Scorpiones*; POCOCK (72).

Brazil: *Araneæ*, 6 n. spp. of *Attidæ*; SIMON (92): 44 n. spp. of *Attidæ*; SIMON (93).

Amazons: *Araneæ*, 5. n. spp. of *Attidæ*; SIMON (92).

Quilipué: *Araneæ*, n. sp. of *Lycosa*; SIMON (97).

Bahia: n. sp. and n. subsp. of *Halacaridæ*; TROUESSART (115 & 117).

Bolivian Andes: n. g. of *Solifugæ*; POCOCK (71).

Chañarcillo: *Araneæ*, n. sp. of *Lithyphantes*; SIMON (97).

Cayenne: *Araneæ*, n. sp. of *Attidæ*; SIMON (93).

Baños: n. sp. of *Scorpiones*; POCOCK (72).

Sinche: n. sp. of *Scorpiones*; POCOCK (72).

Vera Cruz: 2 n. spp. of *Scorpiones*; POCOCK (72).

Lujan: *Araneæ*, n. sp. of *Citharuscelus*; POCOCK (69).

Inca: *Scorpiones*, n. sp. of *Bothriurus*; *Solifugæ*, n. sp. of *Cleobis*; POCOCK (69).

Peru: n. sp. of *Scorpiones*; POCOCK (72).

Peruvia: *Araneæ*, 2 n. spp. of *Attidæ*; SIMON (93).

Venezuela: *Araneæ*, *Attidæ*, 8 n. spp.; SIMON (92): 6 n. spp. of *Attidæ*; SIMON (93).

Patagonia: *Pseudoscorpiones*, n. sp. of *Chelifer*; TULLGREN (120).

Argentina: *Araneæ*, 2 n. spp. of *Attidæ*; SIMON (92).—n. sp. of *Brachio- sternus*; LONNBERG (53).

Paraguay: *Araneæ*, n. sp. of *Attidæ*; SIMON (92).

Valparaiso: *Araneæ*, n. sp. of *Meta*; SIMON (97).

Tierra del Fuego: *Acari*, n. sp. of *Rhombognathus*; TROUESSART (115 & 117).

## ii. LOCAL FAUNÆ.

Central America: *Araneæ*; CAMBRIDGE, F. (19).

Chili: *Scorpiones*; BORELLI (15).

Aconcagua Valley: *Arachnida*; POCOCK (69).

Tierra del Fuego: *Scorpiones*; LONNBERG (53).

## Oriental and Australian Regions.

### i. DISTRIBUTION OF THE NEW SPECIES.

Indian Ocean: n. subsp. of *Halacaridæ*; TROUESSART (115 & 117).

India: *Scorpiones*, 2 n. gg., 12 n. spp. and 15 n. subsp.; *Solifugæ*, 5 n. spp. and 2 n. subsp.; *Pedipulpi*, 3 n. spp.; *Araneæ*, 4 n. gg. and 30 n. spp.; POCOCK (68).—*Araneæ*, 3 n. spp. of *Pacilotheria*; POCOCK (76).—*Araneæ*, 2 n. spp. of *Attidæ*; SIMON (92): 4 n. spp. of *Attidæ*; SIMON (93).

W. India: n. sp. of *Solifugæ*; POCOCK (71).

Colombo: *Araneæ*, 3 n. spp. of *Attidæ*; SIMON (92).

Kandy: *Araneæ*, 2 n. spp. of *Attidæ*; SIMON (92).

Yunnan: *Thelyphonidæ*, n. sp. of *Hypoconus*; POCOCK (71).

Singapore: *Araneæ*, n. sp. of *Attidæ*; SIMON (92): n. sp. of *Attidæ*; SIMON (93).



Siam: *Thelyphonida*, n. sp. of *Thelyphonus*, n. sp. of *Tyropeltis*; Pocock (71).

Cochin China: *Acari*, 2 n. spp. of *Halacarus*; TROUSSART (115 & 117).

Java: *Araneæ*, 2 n. spp. of *Attidæ*; SIMON (92): 2 n. spp. of *Attidæ*; SIMON (93).

Borneo: n. g. of *Attidæ*; WARBURTON (124).

Celebes: n. sp. of *Thelyphonida*; TARNANI (104).

Philippines: *Araneæ*, n. sp. of *Attidæ*; SIMON (92).

Manila: *Araneæ*, 2 n. spp. of *Attidæ*; SIMON (92).

Taprobane: *Araneæ*, n. sp. of *Attidæ*; SIMON (92): 3 n. spp. of *Attidæ*; SIMON (93).

Sandwich Islands: *Arachnida*, incl. many n. genera and n. spp.; SIMON (89).

Christmas Is.: *Pseudoscorpiones*, n. sp. of *Chelifer*; *Araneæ*, n. subsp. and 2 n. spp.; Pocock (70).

N. Guinea: *Araneæ*, n. sp. of *Attidæ*; SIMON (93).

Australia: *Araneæ*, 4 n. spp. of *Attidæ*; SIMON (92).

N. S. Wales: 3 n. spp. of *Araneæ*, n. var. of *Dicrostichus furcatus*; RAINBOW (82).—*Araneæ*, 2 n. spp. (incl. n. g.) of *Thomisidæ*; RAINBOW (83).

Victoria: 6 n. gg. and 21 n. spp. of *Araneæ*; HOGG (45).

## ii. LOCAL FAUNÆ.

British India: *Arachnida* (except *Acari*); Pocock (68).

Australia: *Acari*; ANON (1).

Victoria: *Araneæ*; HOGG (45).

Christmas Island: *Arachnida*; Pocock (70).

## CORRECTION OF RECORD FOR 1897.

On p. 12 in *Arachnida* of Vol. xxxiv, in the Geographical Section 46 n. spp. and 3 n. gg. from the Island of St Vincent are wrongly placed in the Palæarctic Region, they should come under the Neotropical Region, as also should the reference to SIMON (124). The Spiders described in this paper come from Antillean—not from Atlantic—St Vincent.

## IV. SYSTEMATIC.

### ARACHNIDA.

[The following papers deal with *Arachnida* generally: BANKS (6, 11), CASTELLI (30), Pocock (68, 70, 73, 77, 78), SHERBORN (87), SIMON (89).]

### SCORPIONES.

[Consult, in addition to papers mentioned under "*Arachnida* generally," the following: BANKS (5), BIRULA (12, 13, 14), BORELLI (15), CHYZER (31), LONNBERG (53), PENTHER (65), PIERSIG (66, 67), Pocock (69, 72, 74, 79).]

*Bothriurus chilensis*, p. 62, BORELLI, Revist. chilena iv.

*B. alticola*, Inca, p. 357, fig. 1, Pocock, in FITZGERALD's The Highest Andes, n. sp.

*Brachistosternus weijenberghi*, p. 61, BORELLI, Revist. chilena iv.

- Buthoolus*, g. def. and key to spp., p. 28, *melanurus*, p. 28, *pallidus*, *flavescens*, p. 30, *bicolor*, p. 31, Pocock, Faun. Brit. Ind. Arach.; *B. melanurus*, p. 373, var. *dentatus*, nov., p. 375, BIRULA, Bull. Ac. St. Petersb. xii.
- B. melanurus persa*, E. Persia, p. 374, BIRULA, t. c., n. subsp.
- Buthidae*, fam. def. p. 12, key to genera of sub-families, pp. 12 & 42, Pocock, Faun. Brit. Ind. Arach.
- Buthus odonturus*, p. 357, *eupeus*, p. 358, *eupeus thersites*, p. 359, *eupeus afghanus*, p. 360, *caucasicus*, p. 367, BIRULA, Bull. Ac. St. Petersb. xii; *B. gibbosus*, Asia Minor, p. 133, BIRULA, Horæ Soc. ent. Ross. xxxiii; *B. g.* def. p. 13, key to Indian spp. p. 14, *australis*, p. 15, subsp. *finitimus*, p. 16, *doriae* subsp. *odonturus*, p. 16, *caucasicus* subsp. *persicus*, p. 19, *atriostriatus*, *acutus-carinatus*, p. 20, *alticola*, p. 21, subsp. *penjabensis*, p. 22, *tamulus*, p. 23, subsp. p. 24, *rugiscutis*, p. 26, *puchurus*, p. 27, Pocock, Faun. Brit. Ind. Arach.
- B. pachysoma*, E. Persia, p. 370, BIRULA, Bull. Ac. St. Petersb. xii; *B. vesiculatus*, Astracan, Persia, p. 405, pl. xxvi, fig. 4, Pocock, J. Linn. Soc. xxvii; *B. calviceps*, N. W. Somaliland, p. 54, pl. iv, figg. 3 & 3a, Pocock, P. Z. S. 1900; *B. macmahoni*, N. Baluchistan, p. 18, *nigrifrons*, N. Baluchistan, p. 22, *hendersoni*, Madras, p. 26, Pocock, Faun. Brit. Ind. Arach. : n. spp.
- B. finitimus* subsp. *baluchicus*, N. Baluchistan, p. 16, *acute-carinatus* subsp. *rugulosus*, Hyderabad, p. 21, *tamulus* subsp. *concanensis*, Ratnigiri, *sindicus*, Valley of Lower Indus, *gujaratensis*, Kharaghora, *gangeticus*, area of Upper Ganges, p. 25, *rugiscutis* subsp. *nigritis*, S. Deccan, p. 27, Pocock, t. c.; *B. caucasicus* subsp. *persicus*, Seir, p. 404, Pocock, J. Linn. Soc. xxvii; *B. occitanus berberensis*, Somaliland, p. 56, *occitanus zeylensis*, p. 56, Pocock, P. Z. S. 1900; *B. eupeus kirmanensis*, E. Persia, p. 364, *zarudnyi gracilis*, E. Persia, p. 368, BIRULA, Bull. Ac. St. Petersb. xii : n. subsp.
- Calchus nordmanni*, S. W. Transcaucasia, p. 252, descr., BIRULA, Annuaire Mus. St. Petersb. v.
- Centromachetes pococki*, Chili, p. 64, BORELLI, Revist. chilena iv.
- Chactus simonsi*, Rio Amboke in Ecuador, p. 471, *lojanus*, Loja in Ecuador, p. 472, Pocock, Ann. Nat. Hist. v, n. spp.
- Cherilidae*, fam. def., p. 53, Pocock, Faun. Brit. Ind. Arach.
- Cherilus*, g. def. and key to spp., p. 53, *margaritatus*, *insignus*, p. 58, *tricotatus*, p. 59, *gemmifer*, p. 60, *pictus*, p. 61, *ceylonensis*, *birmanicus*, p. 62, *truncatus*, p. 63, Pocock, Faun. Brit. Ind. Arach.
- C. granosus*, W. Himalayas, p. 56, *anthracinus*, W. Himalayas, p. 57, Pocock, t. c., n. sp.
- C. anthracinus rufescens*, W. Himalayas, p. 59, Pocock, t. c., n. subsp.
- Charmus*, g. def., p. 31, *laneus*, p. 32, Pocock, t. c.
- Chiromachetes*, g. def., p. 77, *fergusoni*, p. 78, Pocock, t. c.
- Euscorpium cilicicensis*, Asia Minor, p. 136, BIRULA, Horæ Soc. ent. Ross. xxxiii, n. sp.
- Hadogenes austro-africanus*, Matabeleland, p. 161, *betschuanicus*, British Bechuanaland, p. 162, PENTHER, Ann. Hofmus. Wien xv, n. spp.
- Hadrarooides lunatus*, p. 474, *charcasus*, *maculatus*, p. 475, notes, Pocock, Ann. Nat. Hist. v.
- H. carinatus*, Baños, p. 475, *leopardus*, Eten, Peru, p. 477, var. *vittatus* nov. (mountain form), p. 477, Pocock, t. c., n. spp.
- Hemibuthus*, n. g. def. for (*Archisometrus*) *crassimanus*, p. 34, Pocock, Faun. Brit. Ind. Arach.
- Hemiscorpius lepturus*, Baghdad, p. 77, Pocock, t. c.
- Heterometrus palmatus*, specimens from Asia Minor described, p. 134, BIRULA, Horæ Soc. ent. Ross. xxxiii; *H.* table of known spp. p. 365, *flavus*, *rufus*, *fuscus*, *minor*, omission from "Das Tierreich," p. 365, Pocock, Ann. Nat. Hist. vi.

- H. arabicus*, Arabia, p. 363, *townsendi*, Bushire, Persian Gulf, p. 364, t. c., n. spp.
- Hormurus*, g. def. p. 78, *australasia*, p. 79, *nigripes*, p. 80, Pocock, Faun. Brit. Ind. Arach.
- Iomachus*, g. def. and key to spp., *laviceps*, p. 81, *punctulatus*, p. 83, Pocock, t. c.
- I. laviceps* var. *malabarensis*, Mangalore, p. 82, Pocock, t. c., n. subsp.
- I. nitidus*, S. India, p. 83, Pocock, t. c., n. sp.
- Ichnauridae*, def. and key to genera, p. 76, Pocock, t. c.
- Isometrus*, g. def. and key to spp., p. 44, *europaeus*, p. 46, *thurstoni*, p. 47, *assamensis*, *thwaitesii*, p. 48, *basilicus*, p. 49, *brachycentrus*, p. 50, *acanthurus*, p. 51, *rigidulus*, p. 52, Pocock, t. c.
- I. vittatus*, Madras, p. 50, Pocock, t. c., n. sp.
- Iurus dufourei*, Asia Minor, notes, p. 135, BIRULA, Horæ Soc. ent. Ross. xxxiii.
- Lychas*, g. def. and key to spp., p. 35, *mucronatus*, p. 36, *scutillus*, p. 37, *scaber*, *nigristernis*, p. 38, *rugosus*, p. 39, *tricarinatus*, *hendersoni*, p. 40, *shoplandi*, *lævisfrons*, p. 41, *fax*, p. 42, Pocock, Faun. Brit. Ind. Arach.
- Megacornus segmentatus*, Atoyac in Vera Cruz, p. 470, Pocock, Ann. Nat. Hist. v, n. sp.
- Opisthophthalmus betschuanicus*, British Bechuanaland, p. 160, PENTHER, Ann. Hofmus. Wien xv, n. sp.
- Palamæus*, g. def. and key to spp., p. 84, *swammerdami*, p. 86, subsp. *ludiceps*, p. 87, *fulvipes*, p. 87, *wroughtoni*, p. 88, *latimanus*, *gravimanus*, p. 90, *livurus*, p. 91, *xanthopus*, p. 92, *scaber*, p. 93, *bengalensis*, *phipsoni*, p. 94, *indus*, p. 96, *cæsar*, *longimanus*, p. 97, Pocock, Faun. Brit. Ind. Arach.
- P. oatesii*, nom. nov. for *P. spinifer*, def., p. 98, Pocock, t. c.
- P. barberi*, S. India, p. 95, *serratus*, Ceylon, p. 97, Pocock, t. c., n. spp.
- P. swammerdami flavimanus*, Coonoor, p. 87, *fulvipes madraspatensis*, Madras, p. 88, *fulvipes bombayensis*, Bombay, p. 89, *scaber kanarensis*, Kanara, p. 93, *phipsoni collinus*, Nilgiri Hills, p. 95, Pocock, t. c., n. subsp.
- Pandinus pugilator*, N. W. Somaliland, p. 52, pl. iv, figg. 1 & 1a, *peeli*, N. W. Somaliland, p. 52, pl. iv, fig. 2, *hawkeri*, Somaliland, p. 60, *militaris*, Somaliland, p. 61, Pocock, P. Z. S. 1900, n. spp.
- Parabuthus obscurus*, S. Africa, p. 154, *pachysoba*, British Bechuanaland, p. 156, PENTHER, Ann. Hofmus. Wien xv, n. spp.
- Phoniocercus pictus*, p. 63, BORELLI, Revist. chilena iv.
- Pleniobuthus*, n. g. of *Buthidae* def., p. 43, for *paradoxus*, N. Baluchistan, p. 44, Pocock, Faun. Brit. Ind. Arach. n. sp.
- Pleniochactas*, n. g. of *Chatidae*, def. p. 470, for *dugesii*, Atoyac in Vera Cruz, p. 470, Pocock, Ann. Nat. Hist. v.
- Prionurus crassicauda*, subsp. *orientalis*, E. Persia, p. 355, BIRULA, Bull. Ac. St. Petersb. xii, n. subsp.
- P. finitimus*, E. Persia, p. 356, BIRULA, t. c.
- Scorpionidae*, fam. def., p. 84, Pocock, Faun. Brit. Ind. Arach.
- Scorpiops*, g. def., p. 64, key to spp., p. 65, *hardwicki*, p. 66, *crassimanus*, p. 68, *leptochirus*, p. 69, *petersii*, *montanus*, p. 70, subsp. *tenuicauda*, p. 72, *longimanus*, p. 72, *binghamii*, *anthracinus*, *lindstroemii*, p. 74, *affinis*, p. 75, Pocock, Faun. Brit. Ind. Arach.
- S. montanus* subsp. *satarensis*, Satara, p. 71, Pocock, t. c., n. subsp.
- S. asthenurus*, Kalimpong, p. 73, *insculptus*, W. Himalayas, p. 68, Pocock, t. c., n. spp.
- Stenochirus*, g. def., p. 32, *politus*, *sarasinorum*, p. 33, Pocock, t. c.
- Teuthraustes oculatus*, Sinche, p. 473, Pocock, Ann. Nat. Hist. v, n. sp.
- Tityus simonsi*, Loja, p. 469, Pocock, t. c., n. sp.

- Uroplectes jutrenkai*, E. Transvaal, p. 157, PENTHER, Ann. Hofmus. Wien xv, n. sp.  
*Vejoidea*, fam. def., p. 64, Pocock, Faun. Brit. Ind. Arach.

## PEDIPALPI.

- [See papers under "Arachnida," p. 14, and the following: ANON (2), BANKS (5, 10), Pocock (71), TARNANI (104), WHEELER (127).]  
*Catagæus*, g. def., *pusillus*, p. 130, Pocock, Faun. Brit. Ind. Arach.  
*Hypoctonus*, g. def. and key to Indian spp., p. 111, *binghami*, *wood-masoni*, p. 113, *saxatilis*, *sylvaticus*, p. 115, *rangunensis*, *formosus*, p. 116, subsp. *insularis*, p. 117, *andersoni*, p. 117, Pocock, t. c.  
*H. oatesii*, Sylhet, p. 112, Pocock, t. c.; *H. granosus*, Yunnan, ♀ descr., p. 294, fig. 4, Pocock, Ann. Nat. Hist. v : n. spp.  
*Labochirus tauricornis*, misnamed *cervinus* in J. Bombay Soc. xii, p. 745, p. 295, Pocock, t. c.; *L. g.* def. and key to Indian spp., p. 107, *proboscideus*, p. 108, *tauricornis*, p. 109, *cervinus*, p. 110, Pocock, Faun. Brit. Ind. Arach.  
*Mastigoproctus liochirus*, Guatemala, p. 299, Pocock, Ann. Nat. Hist. v, n. sp.  
*Phrynichus*, g. def., p. 125, *lunatus*, p. 126, *phipsoni*, p. 127, *pusillus*, p. 128, Pocock, Faun. Brit. Ind. Arach.  
*Schizomus*, g. def., p. 119, *crassicaudatus*, p. 120, Pocock, t. c.  
*Stygophrynus*, g. def., p. 129, *cavernicola*, p. 130, Pocock, t. c.  
*Thelyphonus*, g. def. and key to spp., p. 103, *sepiaris*, p. 104, subspp. *indicus* and *muricola*, p. 105, *schnehenii*, p. 105, Pocock, t. c.  
*T. cristatus*, Bengal, p. 105, Pocock, t. c., n. sp.  
*T. wayi*, Battambang in Siam, ♀ descr., p. 295, figg. 3-3b, Pocock, Ann. Nat. Hist. v; *T. pococki*, Celebes, p. 482, TARNANI, Zool. Anz. xxiii : n. spp.  
*Trithyreus*, g. def. and key to Indian spp., p. 121, *grassii*, *cambridgii*, p. 122, Pocock, Faun. Brit. Ind. Arach.  
*T. suboculatus*, Ceylon, p. 122, Pocock, t. c., n. sp.  
*Typopeltis stipsoni*, figg. 2 & 2a, p. 296, Pocock, Ann. Nat. Hist. v.  
*T. dalyi*, Lacan, Siam, p. 397, figg. 1-1c, Pocock, t. c., n. sp.  
*T. kasnakowi*, Kasnakow, p. 481, TARNANI, Zool. Anz. xxiii, n. sp.  
*Uroproctus assamensis*, p. 106, Pocock, Faun. Brit. Ind. Arach.

## ARANEÆ.

- [See papers under "Arachnida" and the following: BANKS (9), BÖSENBERG (16), CAMBRIDGE, F. (19), CAMBRIDGE, O. (20, 21), CARPENTER (28), CASTELLI (29), CHYZER & KULCZNSKI (32), EVANS (37), VAN HASSELT (44), HOGG (45), LAMY (47), LONGLEY (52), Pocock (69, 75, 76), RAINBOW (82, 83), ROBERTSON (84), SARGENT (86), SIMON (92-97), SMITH (98, 99), STRAND (102, 103), THORELL (110), TREGGIER (112), WAGNER (122), WALLACE (123), WARBURTON (124), WESTBERG (126), WHITE (128), WOODRUFFE-PEACOCK (131).]  
*Acanthodon curvipes*, Cameroons, p. 4, THORELL, Bih. Svenska Ak. xxv; *A. constructor*, Chingleput, *fortis*, India, p. 163, *fossor*, India, p. 164, Pocock, Faun. Brit. Ind. Arach. : n. spp.  
*A.*, g. def. and key to Indian spp., p. 161, *opifex*, p. 162, *designatus*, p. 164, Pocock, t. c.  
*Acattyma*, g. def., *cryptica*, p. 166, Pocock, t. c.  
*Acragas*, n. g. of *Attidea* def. for *longimanus*, p. 37, *castaneiceps*, p. 39, *phasianinus*, *miniaceus*, p. 40, *erythræus*, *humilis*, p. 41, all from Brazil,

- leucaspia*, Venezuela, p. 33, *procalvus*, Peruvia, p. 39, SIMON, Ann. Soc. ent. France lxi, n. spp.
- Aerosoma maculata*, Arizona, p. 100, BANKS, Canad. Ent. xxxii, n. sp.
- A. bimacronatum*, pl. xxvi, figg. 14-14b, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Adrastidia*, n. g. of *Philodromidae*, defined, p. 503, *stigmatica*, Hawaii, ♀ and var. descr., p. 503, pl. xvii, fig. 10, *nebulosa*, Hawaii, ♀ descr., p. 503, *longula*, Maui, ♀ descr., p. 504, pl. xvii, fig. 9, SIMON, Fauna Hawaiiensis ii, Pt. v, n. spp.
- Agelena longipes*, Lancashire, ♀ descr. and figs., p. 199, CARPENTER, Ann. Nat. Hist., Ser. vii, vol. vi; *A. ocellata*, Table Mt., p. 326, Pocock, t. c. : n. spp.
- A. nevai*, p. 397, pl. x, SARGENT, P. Ac. Philad. 1900.
- Agelieta*, n. g. of *Attidae*, def., for *andina*, Argentina, p. 383, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Amamra clivosa*, pl. xxxvi, figg. 1-2f, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Amurobius pilosus*, Macedon, Victoria, p. 80, pl. xiii, fig. 1, HOGG, P. Soc. Victoria xiii, n. sp.
- Ametochilus*, g. def., *fossor*, Tavoy, p. 168, Pocock, Faun. Brit. Ind. Arach. *A. atriceps*, Tenasserim, p. 169, Pocock, t. c., n. sp.
- Ammonius*, n. g. of *Theraphosidae*, def., p. 11, for *pupulus*, Cameroons, p. 11, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Amphidraus*, n. g. of *Attidae* def. for *auriga*, Bolivia, *nigritarsis*, Venezuela, p. 60, SIMON, Ann. Soc. ent. France lxi, n. spp.
- Amycus pertyi*, Peruvia, *ectypus*, Brazil, p. 34, *rufifrons*, Brazil, p. 35, *equulus*, *annulatus*, *flavicomis*, Brazil, p. 36, SIMON, t. c., n. spp.
- Anaurus*, n. g. of *Attidae*, def., p. 382, *flavimanus*, Brazil, p. 382, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Anyphena proba*, figured, pl. vii, figg. 3 & 3a, *gibba*, pl. vii, figg. 4 & 5, *gibbosa*, pl. vii, figg. 6 & 7, *subgibba*, pl. vii, fig. 8, *judicata*, pl. vii, fig. 9, *excepta*, pl. vii, fig. 10, *simplex*, pl. vii, figg. 11 & 12, pp. 95 & 96, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- A. stylifer*, ♂, Panama, p. 97, pl. vii, figg. 13 & 13a, *trifida*, ♂, Guatemala, p. 97, pl. vii, figg. 14 & 14a, *plana*, ♂, Panama, p. 97, pl. vii, figg. 15-15b, *tuberosa*, ♂, Guatemala, p. 97, pl. vii, figg. 16 & 16a, *scopulata*, ♂, Guatemala, p. 98, pl. vii, figg. 17 & 17a, CAMBRIDGE, t. c., n. spp.
- Apollophanes punctipes*, p. 132, pl. ix, figg. 19 & 20, *maculatipes*, p. 132, pl. ix, figg. 21-21b, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Apostenus bertkau*, p. 118, BÖSENBERG, Verh. Ver. Rheinland lvi, n. sp.
- Aranea basilissa*, p. 44, *bi-oculata*, p. 44, *septem-tuberculata*, p. 45, *perforata*, *crassicaudex*, p. 46, *sub-bituberculata*, p. 47, *sanguipes*, p. 48, *varians*, p. 49, *rapta*, p. 51, *nigrita*, p. 52, *accentuata*, p. 53, *turbinata*, p. 54, *naxiformis*, p. 55, *decorata*, p. 56, *luteola*, p. 57, *apicalis*, p. 58, Cameroons, THORELL, Bih. Svenska Ak. xxv, n. spp.
- Araneus*, g. def. and key to Indian spp., p. 223, *laglaizei*, p. 224, *unicolor*, *dehaanii*, p. 225, *moluccensis*, *fea*, *cicatrosus*, *citricola*, p. 226, *exanthematicus*, p. 227, *nauticus*, *rumpfi*, p. 228, Pocock, Faun. Brit. Ind. Arach.
- A. bilunifer*, S. India, p. 227, Pocock, t. c.; *A. memorii*, p. 99, pl. xv, fig. 1, *scutigereus*, p. 100, pl. xv, fig. 2, both Victoria, HOGG, P. Soc. Victoria xiii; *A. mensamontis*, Table Mountain, *gramii*, Grahamstown, p. 324, Pocock, Ann. Nat. Hist. vi; *A. parvulus*, Guildford near Sydney, p. 489, pl. xxiv, figg. 3-3c, *singularis*, Bungendore, N. S. Wales, p. 490, pl. xxiv, figg. 4-4b, RAINBOW, P. Linn. Soc. N. S. Wales xxv; *A. emma*, Hawaii, ♀ and varieties descr., p. 482, pl. xvi, fig. 6, *kapiolanis*, Hawaii, ♀ descr., p. 483, pl. xvi, fig. 7, SIMON, Fauna Hawaiiensis ii, Pt. v : n. spp.

- Argiope*, g. def. and key to Indian spp., *arcuata*, p. 220, *lobata*, *pulchella*, p. 221, *undulata*, *anasuja*, *taprobanica*, p. 222, *emula*, *catenulata*, p. 223, Pocock, Faun. Brit. Ind. Arach.; *A. reinwardti*, notes and fig., p. 159, pl. xvi, fig. 2, Pocock, in ANDREWS' "Christmas Island"; *A. cophinaria*, growth and development of instincts, p. 397, pl. ix, SARGENT, P. Ac. Philad. 1900; *A. avara* and n. subsp. descr., p. 476, SIMON, Fauna Hawaiensis ii, Pt. v.
- A. trifasciata*, descr., p. 38, THORELL, Bih. Svenska Ak. xxv.
- Argoctenus pectinatus*, Victoria, p. 106, pl. xvi, fig. 1, Hogg, P. Soc. Victoria xiii, n. sp.
- Argyrodes floridana*, Florida, p. 98, BANKS, Canad. Ent. xxxii, n. sp.
- A. hawaiiensis*, Hawaii, ♂ described, p. 447, SIMON, Fauna Hawaiensis ii, Pt. v; *A. modestus*, Cameroons, p. 23, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Argyropeira*, g. def., p. 215, *fastigata*, *tesselata*, *celebesiana*, *ventralis*, p. 216, Pocock, Faun. Brit. Ind. Arach.; *A. unguolata*, descr., p. 31, THORELL, Bih. Svenska Ak. xxv.
- A. analis*, p. 32, *margaritata*, p. 33, *albo-maculata*, p. 33, THORELL, t. c., n. spp.
- Ariadna natalis*, Christmas Is., p. 158, Pocock in ANDREWS' "Christmas Island"; *A. perkinsi*, Sandwich Islands, ♂ & ♀ described, p. 445, pl. xv, fig. 1, SIMON, Fauna Hawaiensis ii, Pt. v; *A. rapinatrix*, p. 11, *lata*, p. 12, Cameroons, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Ariamnes corniger*, Sandwich Is., ♀ described, p. 447, pl. xv, fig. 2, SIMON, Fauna Hawaiensis ii, Pt. v, n. sp.
- Artanes albomaculatus*, p. 120, BÖSENBERG, Verh. Ver. Rheinland lvi, n. sp.
- Artema*, g. def., *atlanta*, p. 238, Pocock, Faun. Brit. Ind. Arach.
- Asemonea flava*, p. 186, pl. xiii, fig. 18, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Asterocheilus*, n. g. of *Attidæ*, for *frenatus*, Madagascar, p. 397, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Atypus*, g. def., *dorsalis*, p. 158, Pocock, Faun. Brit. Ind. Arach.
- Auximus cupensis*, Port Elizabeth, *hottentottus*, Little Namaqualand, p. 323, Pocock, Ann. Nat. Hist. vi, n. spp.
- Aysa minuta*, Guatemala, p. 99, pl. vii, figg. 18 & 19, *valvula*, Panama, p. 99, pl. vii, fig. 20, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer., n. spp.
- Ballus segmentatus*, Taprobane, p. 398, *sellatus*, Colombo, p. 398, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Bessia*, n. g. of *Ctenizidæ*, defined for *fossoria*, Port Elizabeth, p. 320, Pocock, Ann. Nat. Hist. vi, n. sp.
- Bocus flavus*, Manila, p. 406, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Bolostromus fodiens*, Cameroons, p. 6, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Bomis irrorata*, Cameroons, p. 73, THORELL, t. c., n. sp.
- Brettus martini*, Natal, *albolimbatus*, *semifimbriatus*, India, p. 31, *adonis*, Taprobane, p. 32, SIMON, Ann. Soc. ent. France lxix, n. spp.
- Cærostis*, g. def., p. 230, *paradoxa*, p. 231, Pocock, Faun. Brit. Ind. Arach.
- C. femoralis*, Cameroons, p. 63, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Callilepis insularis*, Guadelope Is., off California, p. 97, BANKS, Canad. Ent. xxxii, n. sp.
- Callinethis apicata*, Cameroons, p. 30, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Calommata*, g. def., *trunculentum*, p. 159, Pocock, Faun. Brit. Ind. Arach.
- Camarius marmoratus*, Grahamstown, p. 332, Pocock, Ann. Nat. Hist. (7) vi, n. sp.
- Caponia secunda*, Grahamstown, p. 321, Pocock, t. c., n. sp.
- Carrhotus ephippiatus*, Cameroons, p. 100, THORELL, Bih. Svenska Ak. xxv, n. sp.



- Castaneira lachrymosa*, pl. xxxiv, figg. 4-4d, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Celatycheus paradoxus*, Panama, ♂ descr., p. 115, pl. viii, figg. 13 & 13a, CAMBRIDGE, F., op. cit. ii, n. sp.
- Centromerus ludovici*, Rhine Province, p. 115, BÖSENBERG, Verh. Ver. Rheinland lvi, n. sp.
- Ceratinella*, sp., Yakutat, Alaska, p. 478, pl. xxix, fig. 5, BANKS, P. Washington Ac. ii.
- Chariobas lineatus*, King Williamstown, p. 325, Pocock, Ann. Nat. Hist. vi, n. sp.
- Charminus*, n. g. of *Lycosida*, defined, p. 83, for *camerunensis*, Cameroons, p. 83, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Chemmis frederici*, figures, pls. vi, fig. 2, viii, figg. 1 & 1a, p. 92, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Chilobrachys*, g. def. and key to Indian spp., p. 193, *fimbriatus*, p. 195, *pocockii*, p. 195, *bicolor*, *flavopilosus*, *fumosus*, p. 196, *masoni*, *andersoni*, *nüelini*, p. 197, *hardwicki*, *stridulans*, p. 198, *brevipes*, *sericeus*, p. 199, Pocock, Faun. Brit. Ind. Arach.
- C. femoralis*, W. India, p. 195, *thorellii*, Assam, p. 199, Pocock, t. c., n. spp.
- Chiracanthium peregrinum*, p. 17, *simplex*, p. 18, Cameroons, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Cithariscius*, n. g. defined, p. 492, for *crawshayi*, Kinani, British E. Africa, Pocock, Ann. Nat. Hist. vi, n. sp.
- Citharocaelus gossii*, Lujan, p. 358, figg. 2-2b, Pocock, in FITZGERALD'S "The Highest Andes," n. sp.
- Cladycnis angusta*, Cameroons, p. 82, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Clubiona depuncta*, Mexico, notes, p. 89, pl. vi, figg. 24 & 25, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- C. tricuspis*, Guatemala, p. 90, pl. vi, figg. 26 & 26a, *linguata*, Guatemala, p. 90, pl. vi, fig. 27, CAMBRIDGE, t. c., n. spp.
- Cnephlocotes simpliciceps*, Hawaii, ♂ descr., p. 462, pl. xviii, fig. 14, SIMON, Fauna Hawaiensis ii, Pt. v, n. sp.
- Cn.* table of ♂ & ♀ of British species, p. 203, *silus*, Lancashire, notes, figures of ♀ etc., p. 201, CARPENTER, Ann. Nat. Hist. vi.
- Cobanus unicolor*, Costa Rica, p. 190, pl. xiv, figg. 3 & 3a, *subfuscus*, Costa Rica, p. 191, pl. xiv, figg. 4 & 4a, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer., n. spp.
- C. mandibularis*, pl. xiii, figg. 19 & 19a, *extensus*, pl. xiii, figg. 20-21a, *flavens*, pl. xiv, figg. 1-2f, all p. 190, CAMBRIDGE, t. c.
- Cocalodes papuanus*, N. Guinea, p. 32, SIMON, Ann. Soc. ent. France lxi, n. sp.
- Cocalus africanus*, Cameroons, p. 91, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Codeta*, n. g. of *Attida* def. for *argenteolimbata*, Singapore, p. 33, SIMON, Ann. Soc. ent. France lxi, n. sp.
- Calosoma floridana*, Florida, p. 98, BANKS, Canad. Ent. xxxii, n. sp.
- Colaxes*, n. g. of *Attida*, def., *nitidiventris*, India, p. 402, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Conothele*, g. def., *birmanica*, p. 165, Pocock, Faun. Brit. Ind. Arach.; *C. birmanica*, notes, p. 151, and p. 219, SIMON, Bull. Soc. ent. France 1900.
- Consingis*, n. g. of *Attida*, def. for *semicana*, Brazil, p. 404, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Corinna areolata*, Cameroons, p. 16, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Corinnomma dubium*, pl. xxxiv, figg. 1-1c, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Cornicularia recurvata*, Alaska, ♂ descr., pl. xxix, fig. 9, *varipes*, Popof Is., ♀ descr., pl. xxix, fig. 4, p. 479, BANKS, P. Washington Ac. ii, n. spp.

- Cotinusa*, nom. nov. for *Sadala*, Peckham, preoccupied, *bisetosa*, Venezuela, p. 389, *vitata*, Brazil, p. 390, *septempunctata*, Venezuela, p. 390, *puella*, Amazons, p. 391, *dimidiata*, Amazons, p. 391, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Cragus inornatus*, p. 106, pl. vii, figg. 30 & 31, CAMBRIDGE, F., Arach. Aran. ii in Biol. Centr.-Amer.
- Crossopriza lyoni*, p. 240, Pocock, Faun. Brit. Ind. Arach.
- Crustulina borealis*, Washington State, p. 98, BANKS, Canad. Ent. xxxii, n. sp.
- Ctenus supinus*, Costa Rica, p. 110, pl. vii, fig. 33, *peregrinus*, Guatemala, p. 110, pl. vii, figg. 34 & 34a, *bilobatus*, Mexico, p. 110, pl. viii, figg. 8 & 8a, *incolans*, Guatemala, p. 111, pl. vii, figg. 35 & 36, *alienus*, Guatemala, p. 111, pl. viii, fig. 2, *excavatus*, Mexico, p. 111, pl. viii, figg. 3 & 3a, *spiralis*, Costa Rica, p. 112, pl. viii, figg. 4 & 4a, *calcaratus*, Guatemala, p. 113, pl. viii, figg. 7 & 7a, *eniger*, Mexico, p. 114, pl. viii, figg. 10 & 11, *convexus*, Guatemala, p. 114, pl. viii, fig. 12, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.; *C. pascillus*, p. 75, *dirus*, *nigro-maculatus*, p. 76, *pogonias*, p. 77, *clathratus*, p. 79, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Ct. sinuatifrons*, length, p. 112, pl. viii, figg. 5-6a, *byrrhus*, figured, p. 113, pl. viii, fig. 9, CAMBRIDGE, F., Arach. Aran. ii in Biol. Centr.-Amer.; *Ct. pilosus*, ♂ descr. from Cameroons, p. 78, THORELL, Bih. Svenska Ak. xxv.
- Cyrbia nigrimanus*, Transvaal, p. 389, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Cyriopagopus*, g. def., p. 204, *paganus*, p. 205, Pocock, Faun. Brit. Ind. Arach.
- Cyrtarachne*, g. def., p. 228, *inequalis*, *cingulata*, p. 229, Pocock, t. c.
- Cy. raniceps*, Ceylon, p. 229, Pocock, t. c.; *Cy. latifrons*, and var., Victoria, p. 102, pl. xv, figg. 4 & 5, Hogg, P. Soc. Victoria xiii; *Cy. flavo-picta*, p. 61, *bi-tumulata*, *nodosa*, p. 62, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Cyrtophora gemmosa*, Cameroons, p. 43, THORELL, t. c., n. sp.
- C. unicolor*, Christmas Is., p. 160, pl. xvi, fig. 3, Pocock in ANDREWS' "Christmas Island."
- Cyclosa perkinsi*, Hawaii, ♀ descr., p. 479, *simplicicauda*, Hawaii, ♀ descr., p. 479, pl. xvi, fig. 4, var. *rufescens*, descr., p. 480, *xanthomelas*, Molokai Mts., Sandwich Is., ♀ descr., p. 480, pl. xvi, fig. 3, *olorina*, Hawaii, ♀ descr., p. 481, pl. xvi, fig. 5, *cucurbitula*, Oahu, ♀ descr., p. 482, SIMON, Fauna Hawaiiensis ii, Pt. v, n. spp.
- C. tuberculifera*, pl. xxxvi, figg. 10-10c, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Cydrelichus*, n. g. of *Zodariidae*, defined, *spenceri*, Port Elizabeth, ♀ descr., p. 325, Pocock, Ann. Nat. Hist. vi, n. sp.
- Cynapes*, n. g. of *Attidae*, def., *canosus*, Mauritius, p. 393, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Cyphonisia soleata*, Cameroons, p. 5, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Damarchus*, g. def., *oatesii*, p. 169, Pocock, Faun. Brit. Ind. Arach.
- Dendrolycosa*, g. def., p. 246, *robusta*, p. 247, Pocock, t. c.
- D. stauntoni*, S. India, p. 247, Pocock, t. c., n. sp.
- Dica insulana*, ♂, ♀ and vars. descr., Hawaii, p. 490, pl. xvii, fig. 13, SIMON, Fauna Hawaiiensis ii, Pt. v.
- D. vitellina*, Hawaii, ♂ and ♀ descr., p. 491, pl. xvii, fig. 14, SIMON, t. c., n. sp.
- Diplothele*, g. def., p. 174, *walshi*, *hayli*, p. 175, Pocock, Faun. Brit. Ind. Arach.
- Dolophones maximus*, Victoria, p. 104, pl. xv, fig. 5, Hogg, P. Soc. Victoria xiii, n. sp.



- Doryonychus*, n. g. of *Tetragnathidae*, defined, p. 465, for *raptor*, Kauai, Sandwich Is., p. 466, pls. xvi, fig. 8, xix, fig. 1, SIMON, Fauna Hawaiiensis ii, Pt. v, n. sp.
- Drassus voigtii*, p. 117, BÖSENBERG, Verh. Ver. Rheinland lvi; *D. debilis*, Victoria, p. 90, pl. xiv, fig. 1, HOGG, P. Soc. Victoria xiii; *D. saeren-seni*, Skarimodal, p. 98, STRAND, Nyt Mag. Naturv. xxxviii: n. spp.
- Dresserus darlingi*, Mashonaland, *olivaceus*, Grahamstown, descr., p. 322, *collinus*, Table Mt., p. 323, Pocock, Ann. Nat. Hist. vi, n. spp.
- Dysdera australiensis*, Sydney, ♀ descr., p. 485, pl. xxiii, figg. 1 & 1a; RAINBOW, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Emertonius rufescens*, Madagascar, p. 405, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Encolpius*, n. g. of *Attidae* def. for *albobarbatus*, Brazil, p. 59, SIMON, t. c., n. sp.
- Epeira arizonensis*, Arizona, p. 100, BANKS, Canad. Ent. xxxii, n. sp.
- E. semifoliata*, pl. xxxvi, figg. 3-3c, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Epicadinus trifidus*=*Eripus trifidus* (O. P. Camb.), p. 159, pl. x, figg. 33 & 33a, CAMBRIDGE, F., op. cit. ii.
- Epicharmus*, n. g. of *Attidae*, def. for *ernsti*, Venezuela, SIMON, Ann. Soc. ent. France lxix, n. sp.
- Eresus spenceri*, Port Elizabeth, p. 322, Pocock, Ann. Nat. Hist. vi, n. sp.
- Erica eugenia*, p. 175, pl. xii, figg. 10-10c, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Erigone famelica*, Alaska, p. 480, pl. xxix, figg. 7 & 8, BANKS, P. Washington Ac. ii.
- Eriassus pustulatus*, pl. xxxv, figg. 2-2d, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Eucamptopus*, n. g. of *Lycosidae*, def., p. 244, for *coronatus*, S. India, p. 245, Pocock, Faun. Brit. Ind. Arach., n. sp.
- Euophrys decorata* var. *dyscrita* nov., Colombia, p. 285, PENTHER in THERESE, PRINZESSIN VON BAYERN, Zool. Anz. xxiii, n. sp.
- Euprosthénops*, g. def., p. 248, *elliotti*, p. 249, Pocock, t. c.
- Euryopsis 5-maculata*, Falb Church, Va., p. 97, BANKS, Canad. Ent. xxxii, n. sp.
- Eutichurus putus*, pl. xxxiv, figg. 3-3d, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Fecenia*, g. def., *travancoria*, *cylindrata*, p. 212, Pocock, Faun. Brit. Ind. Arach.
- Fluda nigratarsis*, Venezuela, p. 406, *angulosa*, Venezuela, p. 407, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Gasteracantha*, g. def. and key to Indian spp., p. 231, *arcuata*, p. 232, *sororna*, *hasseltii*, *geminata*, p. 233, *remifera*, p. 233, *frontata*, *diadsmia*, p. 234, *leucomelæna*, *brevispina*, p. 235, Pocock, Faun. Brit. Ind. Arach.
- G. dalyi*, S. India, p. 232, Pocock, t. c.; *G. spenceri*, E. London, p. 324, Pocock, Ann. Nat. Hist. vi: n. spp.
- Gippsicola*, n. g. of *Oonopidae*, p. 85, for *raleighi*, p. 86, pl. xiii, fig. 5, HOGG, P. Soc. Victoria xiii, n. sp.
- Gnaphosoides*, n. g. of *Oonopidae*, def., p. 92, for *signatus*, Victoria, p. 93, pl. xiv, fig. 2, HOGG, t. c., n. sp.
- Goleta peckhami*, Madagascar, p. 396, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Gonglydium alascensis*, Alaska, p. 479, pl. xxix, fig. 3, BANKS, P. Washington Ac. ii, n. sp.
- Gypogyna*, n. g. of *Attidae*, def., for *forceps*, Paraguay, p. 387, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Habrocestum signatum*, Los Angeles, Calif., p. 101, BANKS, Canad. Ent. xxxii, n. sp.

- Hapalothele varius*, Victoria, descr., p. 78, Hogg, P. Soc. Victoria xiii.  
*Haplodactylus*, g. def., *nilgirinus*, *cervinus*, p. 185, Pocock, Faun. Brit. Ind. Arach.  
*Haterius*, n. g. of *Attida*, def., for *semitectus*, Australia, p. 403, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.  
*Heligmomerus*, g. def., *taprobanicus*, p. 164, *prostans*, p. 165, Pocock, Faun. Brit. Ind. Arach.  
*Herennia*, g. def., *ornatissima*, p. 219, Pocock, t. c.  
*Hermachastes*, n. g. of *Ctenisida*, defined for *collinus*, Table Mt., p. 319, Pocock, Ann. Nat. Hist. vi, n. sp.  
*Hersilia savignyi*, *pectinata*, p. 241, *clathrata*, p. 242, Pocock, Faun. Brit. Ind. Arach.  
*Heterochemmis*, n. g. of *Liocranina*, for *Liocranum mirabile*, p. 91, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.  
*Heterophrictus*, n. g. of *Theraphosida*, def. for *milleti*, Nasik, p. 180, Pocock, Faun. Brit. Ind. Arach. n. sp.  
*Heteropoda listeri*, Christmas Is., p. 161, pl. xvi, figg. 4-4d, Pocock in ANDREWS' "Christmas Island," n. sp.  
*H.*, g. def. and key to Indian spp., p. 259, *venatoria*, *phasma*, p. 260, *searpunctata*, *fabrei*, *kandiana*, *prompta*, p. 261, *smythiesi*, *languida*, *leprosa*, *plebeia*, p. 262, *lutea*, *umbrata*, *cluta*, *subtilis*, p. 263, Pocock, Faun. Brit. Ind. Arach.; *H. venatoria*, p. 120, pl. viii, figg. 22-23f, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.  
*Hippasa*, g. def. and key to Indian spp., p. 249, *pantherina*, *olivacea*, p. 250, *agelenoides*, *holmeræ*, p. 251, Pocock, Faun. Brit. Ind. Arach.  
*H. lycosina*, India, *pisaurina*, W. India, p. 250, Pocock, t. c., n. spp.  
*Hippasa albo-punctata*, Cameroons, p. 84, THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Hædillus searpunctatus*, p. 122, pl. ix, figg. 1-1d, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.  
*Hyarachne*, n. g. of *Theraphosida*, defined, p. 8, for *horrida*, Cameroons, p. 9, THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Hygropoda procera*, p. 245, Pocock, Faun. Brit. Ind. Arach.  
*Hylus albo-plagiatus*, p. 93, *albo-fasciatus*, p. 94, *suillus*, p. 95, THORELL, Bih. Svenska Ak. xxv, n. spp.  
*Hylobius*, n. g. of *Dictynida*, for *divergens*, p. 82, pl. xiii, fig. 2, *punctatus*, p. 84, pl. xiii, fig. 3, Victoria, Hogg, P. Soc. Victoria xiii, n. spp.  
*Hypæus*, n. g. def. for *tenuimanus*, *ividus*, p. 42, *triplagiatus*, p. 43, *quadrinotatus*, p. 44, *flavipes*, p. 45, *miles*, *annulifer*, p. 46, *ignicomis*, *frotosus*, p. 47, *luridomaculatus*, *furcifer*, *concinus*, p. 48, *nigro-comosus*, p. 49, all from Brazil, *venezuelanus*, p. 44, *estebanensis*, p. 45, Venezuela, *porcatus*, Cayenne, p. 45, *cucullatus*, Ecuador, p. 49, SIMON, Ann. Soc. ent. France lxix, n. spp.  
*Hysterochrates didymus*, ♀, St Thomas Is., p. 489, fig. b, p. 493, *scepticus*, ♀, St Thomas Is., p. 490, *apostolicus*, ♀, St Thomas Is., p. 491, Pocock, Ann. Nat. Hist. vi, n. spp.  
*Isaloides*, n. g. of *Thomisida*, defined, for *putus* (= *Dixa puta* and *Erisus pustulatus*, O. P. Cambr.), p. 163, pl. xi, figg. 5-5c, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.  
*Ischnocolus*, g. def., *luteatus*, *brevipes*, p. 183, *ornatus*, p. 184, Pocock, Faun. Brit. Ind. Arach.  
*I. tomentosus*, Cameroons, p. 9, THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Ischnothele*, g. def., p. 170, *dumicola*, W. India, p. 171, Pocock, Faun. Brit. Ind. Arach., n. sp.  
*Jotus cinctus*, Cameroons, p. 101, THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Keyserlingella cara*, Guatemala, p. 177, pl. xii, figg. 9 & 9a, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.

- Labulla graphica*, p. 463, pl. xvi, fig. 2, *torosa*, p. 464, pl. xvi, fig. 1, Hawaii, ♂ and ♀ descr., SIMON, Fauna Hawaiensis ii, Pt. v, n. spp.
- Lagnus kochi*, Australia, p. 381, SIMON, Ann. Soc. ent. Belgique xliv, n. sp.
- Lapsias*, n. g. of *Attidæ*, def. for *estebanensis*, Venezuela, p. 383, *ciliatus*, Venezuela, p. 384, *cyrboides*, Venezuela, p. 384, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Larinia fasciata*, Cameroons, p. 41, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Lathrodectus*, g. def., *hasseltii*, *indicus* and subsp. *elegans*, p. 237, *geometricus*, p. 238, Pocock, Faun. Brit. Ind. Arach.
- Lepthyphantes alascensis*, Alaska, p. 481, pl. xxix, fig. 6, BANKS, P. Washington Ac. ii, n. sp.
- Letoia*, n. g. of *Attidæ*, def. for *ephippiata*, Venezuela, p. 61, SIMON, Ann. Soc. ent. France lxix, n. sp.
- Linus albinus*, India, p. 33, SIMON, t. c., n. sp.
- Linyphia confinis*, pl. xxxv, figg. 9-9c, *lata*, pl. xxxv, figg. 10-11d; CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Liphistius*, g. def., *birmanicus*, p. 156, Pocock, Faun. Brit. Ind. Arach.
- Lithyphantes porteri*, Chañarcillo, p. 50, SIMON, Revist. chilena iv, n. sp.
- Lycosa*, g. def. and key to Indian spp., p. 252, *phipsoni*, *wroughtoni*, *nigrotibialis*, p. 253, *indagatrix*, *catula*, *chaperi*, p. 254, Pocock, Faun. Brit. Ind. Arach.
- L. hectoria*, ♀, Table Mt., p. 327, *subvittata*, Port Elizabeth, p. 327, *schönlandi*, ♀, Grahamstown, p. 328, *promontorii*, Wynberg, p. 328, *alcoensis*, Port Elizabeth, p. 329, *bessiana*, Port Elizabeth, p. 329, Pocock, Ann. Nat. Hist. vi; *L. guntheri*, Seir, descr., p. 401, pl. xxvi, figg. 1 & 1b, Pocock, J. Linn. Soc. xxvii; *L. kalukanai*, Kauai, ♀ descr., p. 506, pl. xviii, fig. 4, *likelikeæ*, Kauai, ♀ descr., p. 506, pl. xviii, fig. 3, SIMON, Fauna Hawaiensis ii, Pt. v; *L. heterura*, Quilpué, p. 54, SIMON, Revist. chilena iv; *L. furva*, *sordulenta*, p. 85, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Lycosella spinipes*, Kauai, ♀ descr., p. 507, pls. xvi, fig. 9, xviii, fig. 5, *annulata*, Oahu, ♀ descr., p. 508, pl. xvi, fig. 10, SIMON, Fauna Hawaiensis ii, Pt. v, n. spp.
- Lycothorax*, n. g. of *Theraphosidae*, def., p. 7, for *sjöstedtii*, Cameroons, p. 7, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Lyrognathus*, g. def., p. 202, *crotalus*, p. 203, Pocock, Faun. Brit. Ind. Arach.
- L. saltator*, Assam, *pugnax*, Assam, p. 203, Pocock, t. c., n. sp.
- Lyssomanes deinognathus*, Mexico, p. 182, pl. xiii, figg. 5 & 6, *pachygnathus*, Guatemala, p. 182, pl. xiii, fig. 7 & 7a, *protarsalis*, Guatemala, p. 183, pl. xiii, figg. 3-3c, *simplicipes*, Guatemala, p. 183, pl. xiii, figg. 4-4d, *spiralis*, Guatemala, p. 183, pl. xii, figg. 11-11j, *spinifer*, Mexico, p. 184, pl. xii, figg. 12-13a, *trifurcatus*, Panama, p. 184, pl. xiii, figg. 9-10, *mandibulatus*, Mexico, p. 186, pl. xiii, figg. 11-11c, *elegans*, Mexico, p. 186, pls. xii, fig. 14, xiii, figg. 12-12b, *gracilis*, Guatemala, p. 186, pl. xiii, fig. 16, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.; *L. quadrinotatus*, Venezuela, p. 27, SIMON, Ann. Soc. ent. France lxix : n. spp.
- L. jemieus*, pl. xiii, figg. 14 & 15, p. 184, *patens*, pl. xiii, figg. 1-2a, p. 185, *placidus*, pl. xiii, fig. 13, p. 185, *remotus*, pl. xiii, figg. 8-8c, p. 185, *blandus*, pl. xiii, figg. 11-11c, p. 186, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Macedonia*, n. g. of *Oonopidae*, def. for *burchelli*, Victoria, p. 86, pl. xiii, fig. 4, HOGG, P. Soc. Victoria xiii, n. sp.
- Macopæus*, n. g. of *Attidæ*, def. for *spinosus*, Madagascar, p. 381, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Macrophyes attenuata*, p. 106, pl. vii, figg. 32-32f, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.

- Macrothela*, g. def., *maculata*, p. 171, Pocock, Faun. Brit. Ind. Arach.  
*Manola*, n. g. of *Attidæ* def. for *starkei*, Venezuela, p. 37, SIMON, Ann. Soc. ent. France lxi, n. sp.  
*Mago acutidens*, p. 56, *longidens*, *vicanus*, *pexus*, p. 57, *opiparis*, *saperda*, p. 58, all from Brazil, *procar*, Peruvia, p. 59, SIMON, t. c., n. spp.  
*Majella affinis*, p. 165, pl. xi, figg. 6 & 6a, *spinigera*, p. 165, pl. xi, figg. 7-7c, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.  
*Mallos niveus*, pl. xxxiv, figg. 1-1f, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.  
*Mantisatta*, n. g. of *Attidæ* defined, p. 384, for *trucidans*, Borneo, ♀ descr. and figg., p. 385, WARBURTON, P. Z. S. 1900, n. sp.  
*Marengo chelifera*, Java, p. 400, *striatipes*, Colombo, p. 400, *nitida*, Kandy, p. 401, *coriacea*, Natal, p. 401, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.  
*Margaromma nitida*, Cameroons, p. 99, THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Marptusa soricina*, p. 91, *ocellata*, p. 92, THORELL, t. c., n. spp.  
*Martella pottsi*, p. 174, pl. xi, figg. 14 & 15, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.  
*M. lineatipes*, Mexico, p. 175, pl. xi, figg. 16-16b, CAMBRIDGE, t. c., n. sp.  
*Mazax spinosus*, pl. xxxiv, figg. 2-2e, CAMBRIDGE, O., op. cit. i.  
*Mecaphesa*, n. g. of *Thomisidæ* defined for *cincta*, Maui, ♀ descr., p. 495, and *semispinosa*, Hawaii, ♀ descr., p. 496, pl. xvii, fig. 4, SIMON, Fauna Hawaiiensis ii, Pt. v, n. spp.  
*Medmassa bicolor*, Victoria, p. 112, pl. xvi, fig. 4, *fusca*, Victoria, p. 113, pl. xvii, fig. 1, HOGG, P. Soc. Victoria xiii, n. spp.  
*Melopæus*, g. def., *minax*, p. 205, Pocock, Faun. Brit. Ind. Arach.  
*Messagris*, n. g. of *Attidæ*, def. for *constricta*, Cape of Good Hope, p. 397, *martini*, Natal, p. 398, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.  
*Meta longipes*, Valparaiso, p. 51, SIMON, Revist. chilena iv.  
*M. porteri*, Las Palmas, ♀ descr., p. 51, SIMON, t. c., n. sp.  
*Metatobias*, n. g. of *Thomisidæ* defined, p. 161, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.  
*Micaria dahlit*, p. 119, *lenzii*, p. 120, Province of the Rhine, BÖSENBERG, Verh. Ver. Rheinland lvi, n. spp.  
*Micromerys debilis*, Cameroons, p. 22, THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Microneta insulana*, Hawaii, ♂ descr., p. 461, pl. xviii, fig. 15, SIMON, Fauna Hawaiiensis ii, Pt. v, n. sp.  
*Mimetus trituberculatus*, pl. xxxvi, figg. 5-5b, *rapax*, pl. xxxvi, figg. 6-7a, *crudelis*, pl. xxxvi, figg. 8-8c, *hirsutus*, pl. xxxvi, fig. 9, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.  
*M. insidiator*, Cameroons, p. 29, THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Misumena nesiotæ*, ♀ and var. from Hawaii descr., p. 485, SIMON, Fauna Hawaiiensis ii, Pt. v.  
*M. tristania*, Cobbity, N. S. Wales, ♀ descr., p. 171, pl. xxx, figg. 1 & 1a, RAINBOW, Rec. Austral. Mus. iii; *M. oreades*, Hawaii, ♀ descr. p. 485, *nigrofrenata*, Hawaii, ♀ and vars. descr., p. 486, pl. xvii, fig. 2, *cretacea*, Molokai, ♀ and var. descr., p. 487, *anguliventris*, Hawaii, ♂, ♀ and vars. descr., p. 488, pl. xvii, fig. 11, *velata*, Maui, ♂, ♀ and vars. descr., p. 489, pl. xvii, fig. 12, SIMON, Fauna Hawaiiensis ii, Pt. v : n. spp.  
*Misumenoides*, n. g. defined, p. 136, to contain Central American spp. placed in g. *Runcinia* by O. P. Cambridge, [Biol. Centr.-Amer., Arach. Aran. i.] *tibialis*, p. 139, pl. ix, fig. 25, *blandus*, p. 139, pl. ix, fig. 26, *magnus*, p. 140, pl. ix, fig. 27-28b, *parvus*, p. 140, pl. ix, fig. 29, *annulipes*, p. 140, pl. ix, fig. 30, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.

- M. bifascia*, Guatemala, p. 140, pl. ix, fig. 31, CAMBRIDGE, t. c., n. sp.  
*Misumenops*, n. g. defined, p. 141, *spiralis*, Guatemala, p. 142, pl. x, fig. 2,  
*volatus*, Guatemala, p. 142, pl. x, figg. 3 & 3a, CAMBRIDGE, t. c., n. spp.  
*M. prosper*, p. 143, pl. x, figg. 4 & 4a, *damsosus*, p. 143, pl. x, figg. 5 & 5a,  
*spanius*, p. 144, pl. x, fig. 6, *pascalis*, p. 144, pl. x, fig. 7, *americanus*,  
p. 144, pl. x, figg. 8 & 9, *dubius*, p. 145, pl. x, figg. 10-10b, CAMBRIDGE,  
t. c.  
*Miturga maculata*, Victoria, p. 109, pl. xvi, fig. 3, HOGG, P. Soc. Victoria  
xiii, n. sp.  
*Mnesitheus*, n. g. of *Dictynidae* defined, p. 18, for *asper*, Cameroons, p. 18,  
THORELL, Bih. Svenska Ak. xxv, n. sp.  
*Murricia indica*, p. 242, Pocock, Faun. Brit. Ind. Arach.  
*Nealos*, n. g. of *Attida* def., for *striatipes*, Java, and *caligatus*, Taprobane,  
p. 20, SIMON, Ann. Soc. ent. France lxi, n. sp.  
*Nemesiellus*, n. g. of *Ctenizidae*, def. for *montanus*, S. India, p. 168, Pocock,  
Faun. Brit. Ind. Arach., n. sp.  
*Nephila baculigera*, p. 36, *dolabella*, p. 37, THORELL, Bih. Svenska Ak.  
xxv, n. spp.  
*N. nigrifarsia*, subspecies *insulicola*, Christmas Is., p. 160, Pocock in ANDREWS'  
"Christmas Island," n. subsp.  
*N.*, g. def., *maculata*, p. 217, *kuklii*, *imperialis*, *clavata*, p. 218, *malabar-*  
*ensis*, p. 219, Pocock, Faun. Brit. Ind. Arach.  
*Noegus*, n. g. of *Attida* def., for *transversalis*, *fulvocristatus*, p. 50, *refus*, *ni-*  
*veomarginatus*, p. 51, *coccineus*, *fuscimanus*, *comatulus*, p. 52, *actinosus*,  
*vulpio*, p. 53, *niveogularis*, *bidens*, p. 54, *arator*, *uncatus*, p. 55, Brazil,  
SIMON, Ann. Soc. ent. France lxi, n. spp.  
*Ocyale*, g. def., p. 251, *atalanta*, p. 252, Pocock, Faun. Brit. Ind. Arach.  
*Odo patricius*, Las Palmas, ♀ descr., p. 53, SIMON, Revist. chilena iv,  
n. sp.  
*Onocolus pentagonus*, Panama, p. 160, pl. x, figg. 35-36f, CAMBRIDGE,  
Arach. Aran. ii in Biol. Centr.-Amer.  
*Onomastus*, n. g. def., for *quinguenotatus*, Taprobane, and *patellaris*, India,  
p. 29, SIMON, Ann. Soc. ent. France lxi, n. spp.  
*Ordgarius*, g. def., *hobsoni*, *sexspinosus*, p. 230, Pocock, Faun. Brit. Ind.  
Arach.  
*Ornithoctonus*, g. def., p. 205, *andersoni*, p. 206, Pocock, t. c.  
*Orthrus*, n. g. of *Attida* def., for *bicolor*, p. 28, SIMON, Ann. Soc. ent. France  
lxi, n. sp.  
*Oxyopes dorsalis*, p. 87, *aureolus*, p. 88, THORELL, Bih. Svenska Ak. xxv,  
n. spp.  
*Pachyballus*, n. g. of *Attida*, def., for *transversus*, Congo, p. 399, *castaneus*,  
Natal, p. 399, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.  
*Padilla variator*, Madagascar, p. 393, *lanceuria*, Nossibé, p. 394, *mantia*,  
Diego Suarez, p. 394, *glauca*, Madagascar, p. 395, *javana*, Java,  
p. 395, SIMON, t. c., n. spp.  
*Palystes lyconinus*, Port Elizabeth, p. 330, *cultrifer*, Grahamstown, p. 331,  
*perornatus*, Queenstown, p. 331, Pocock, Ann. Nat. Hist. vi, n. spp.  
*P. kochi*, p. 265, *flavidus*, p. 266, Pocock, Faun. Brit. Ind. Arach.  
*Panachrosta*, n. g. of *Attida*, for *paludosa*, Colombo, p. 405, SIMON, Ann.  
Soc. ent. Belgique xlv, n. spp.  
*Pandercetes*, g. def., *decepiens*, p. 264, *celatus*, *macilentus*, p. 265, Pocock,  
Faun. Brit. Ind. Arach.  
*Pandinus*, n. g. of *Attida*, def. for *scalaris*, Madagascar, p. 27, SIMON, Ann.  
Soc. ent. France lxi, n. sp.  
*Paphlagon beatus*, pl. xxvi, figg. 13-13e, CAMBRIDGE, O., Arach. Aran. i  
in Biol. Centr.-Amer.  
*Paradamoetas*, g. defined, *formicina*, p. 177, pl. xii, figg. 5-6c, CAMBRIDGE,  
F., op. cit. ii.



- Paraplectana multi-maculata*, Cameroons, p. 60, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Parastephanops*, n. g. of *Thomisida*, defined for *cognatus* (= *Stephanopoides cognata*, O. P. Cambr.), p. 163, pl. xi, fig. 4, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Parasynema*, n. g. defined, for *Synema cirripes* O. P. Camb., p. 153, *cirripes*, p. 153, pl. x, fig. 23, CAMBRIDGE, t. c.
- Paratobias*, n. g. of *Thomisida*, defined, p. 162, for *championi*, Panama, p. 162, pl. xi, figg. 2-2e, CAMBRIDGE, t. c., n. sp.
- Pardosa tenera*, p. 86, *manicata*, p. 87, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Peplometus*, n. g. of *Attida*, def., for *chlorophthalmus*, Natal, p. 399, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Perenethis*, g. def., p. 245, *unifasciata*, *indica*, p. 246, Pocock, Faun. Brit. Ind. Arach.
- Peucetia*, g. def. and key to spp., *viridana*, p. 255, *prasina*, *procera*, p. 256, Pocock, t. c.
- P. graminea*, W. India, p. 256, Pocock, t. c.; *P. maculifera*, ♀, King Williamstown, p. 329, Pocock, Ann. Nat. Hist. vi : n. spp.
- Phæaci*, n. g. of *Attida* def., for *fimbriatus*, Java, p. 32, SIMON, Ann. Soc. ent. France lxix, n. sp.
- Phalæa crassa*, ♀ descr., Cameroons, p. 80, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Philates*, n. g. of *Attida*, def., for *grammicus*, Manila, p. 402, *inornatus*, Kandy, p. 403, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Philodromus inæquipes*, Washington, D. C., p. 99, BANKS, Canad. Ent. xxxii, n. sp.
- P. generalis*, synonymy, p. 18, CASTELLI, Boll. Nat. xx.
- Pherenice*, n. g. of *Épeirida*, def., p. 59, for *tristis*, Cameroons, p. 59, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Phlogiodes*, g. def., *validus*, p. 179, *robustus*, p. 180, Pocock, Faun. Brit. Ind. Arach.
- Phogiellus*, g. def., *subarmatus*, p. 202, Pocock, t. c.
- P. miranda*, Bengal, p. 190, Pocock, t. c., n. sp.
- Phorocidia splendida*, p. 27, *rubens*, p. 28 THORELL, Bih. Svenska Ak. xxv, n. spp.
- Piranthus casteti*, India, p. 396, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Plagiobothrus*, g. def., p. 175, *semilunaris*, p. 176, Pocock, Faun. Brit. Ind. Arach.
- Plagiopalus*, n. g. of *Philodromida* defined, p. 499, synopsis of spp., p. 500, *atomarius*, Hawaii, ♂ and ♀ descr., p. 500, pl. xvii, fig. 7, *personatus*, Lanai, ♀ descr., p. 501, pl. xvii, fig. 8, *semipunctatus*, Maui, descr., p. 501, pl. xvii, fig. 15, *nigriventris*, Hawaii, ♀ descr., p. 502, SIMON, Fauna Hawaiensis ii, Pt. v, n. spp.
- Plator indicus*, p. 272, Pocock, Faun. Brit. Ind. Arach.
- Plesiophrictus*, g. def., *millardi*, p. 181, *collinus*, *tenuipes*, *fabrei*, p. 182, Pocock, t. c.
- P. sericeus*, Poona, p. 182, Pocock, t. c., n. sp.
- Pacilotheria*, g. def. and key to Indian spp., p. 188, *rufilata*, *metallica*, p. 189, *subfusca*, *regalis*, p. 190, *striata*, *formosa*, p. 191, *vittata*, *fusciata*, *ornata*, p. 192, Pocock, t. c.; *P. fasciata*, p. 125, pl. A, fig. 2, *subfusca*, p. 126, *vittata*, p. 126, *striata*, p. 126, Pocock, J. Bombay Soc. xiii.
- P. regalis*, Nilgiri Hills, p. 127, pl. A, figg. 1-16, *formosa*, Kadiampatti, p. 129, *metallica*, Gooty, p. 130, *ornata*, Ratnapura, S. Ceylon, p. 130, Pocock, t. c., n. spp.
- Poltya*, g. def., p. 235, *illepidus*, *pannucæus*, p. 236, Pocock, Faun. Brit. Ind. Arach.

- Portia rufenta*, Madagascar, p. 351, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Prasinus hamata*, Cameroon, p. 41, THORELL, Bih. Svenska Ak. xiv, n. sp.
- Prospira*, n. g. of *Clubionidae*, ex *ethiopia*, Cameroon, p. 13, *reticulata*, Cameroon, p. 15, THORELL, t. c., n. spp.
- Prorana*, n. g. for *Pterida* g. of *Phidolomidae*, p. 456, synopsis of spp. from Sandwich Is., p. 456, *schwanlandi*, Oahu, ♂ descr., p. 467, pl. xvii, fig. 8, SIMON, Fauna Hawaiiensis ii, Pt. v.
- P. aculeatus*, Karai, Sandwich Is., ♂ descr., p. 456, *canonius*, Maui, ♂ descr., p. 456, *celax*, Maui, ♂ descr., p. 459, pl. xvii, fig. 5, SIMON, t. c., n. spp.
- Prasinus nupalis*, figured, pl. ix, figg. 16 & 16a, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Pterida*, see *Prorana*, sup.
- Pterinochilus lupardi*, ♂ descr., near L. Ngami, *schwanlandi*, ♂ descr., Grabatzen/wn, p. 315, Pocock, Ann. Nat. Hist. vi, n. spp.
- Psecrus*, g. def., p. 210, *torvus*, *ghecuana*, *alticeps*, p. 211, Pocock, Faun. Brit. Ind. Arach.
- Pseudoparinathus variabilis*, Mexico, ♀, p. 119, pl. viii, figg. 21-21a, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer., n. sp.
- Pyglo*, n. g. of *Epeiridae*, def., p. 39, for *nitida*, Cameroons, p. 40, THORELL, Bih. Svenska Ak. xiv, n. sp.
- Ramaes remotus*, figured, p. 127, pl. ix, figg. 15-15b, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Remsius sordidatus*, Cameroons, p. 70, THORELL, Bih. Svenska Ak. xiv, n. sp.
- Rogmocrypta*, n. g. of *Attidae*, def., *nigella*, Philippines, p. 387, *pada*, Singapore, p. 387, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Rothus curatus*, Little Namaqualand, p. 326, Pocock, Ann. Nat. Hist. vi, n. sp.
- Runcinia californica*, Los Angeles, Cal., p. 99, BANKS, Canad. Ent. xxxii, n. sp.
- Saccodolmus*, n. g. of *Thomisidae*, p. 172, for *formicorus*, Aelong, N. S. Wales, p. 174, pl. xxx, figg. 2-2c, RAINBOW, Rec. Austral. Mus. iii, n. sp.
- Sallicus jugularis*, Australia, p. 404, *eumenes*, Nossi Bé, p. 405, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Sandalodes pubens*, Hawaii, ♂ and ♀ descr., p. 513, pl. xviii, fig. 7, *validus*, Hawaii, ♂ descr., p. 514, pl. xviii, fig. 6, *albovilatus*, Lanai, ♂ descr., p. 514, pl. xviii, fig. 8, *canosus*, Maui, ♀ descr., p. 515, pl. xviii, fig. 13, *navotus*, Hawaii, ♂ and ♀ descr., p. 515, pl. xviii, fig. 9, *cruciatu*, Hawaii, ♂ descr., p. 516, pl. xviii, fig. 11, *rererundus*, Oahu, ♂ descr., p. 516, pl. xviii, fig. 10, *seniculus*, Maui, ♀ descr., p. 517, pl. xviii, fig. 12, SIMON, Fauna Hawaiiensis ii, Pt. v, n. spp.
- Sason*, g. def. and key to spp., p. 172, *robustum*, *cinctipes*, p. 173, *andamanicum*, p. 174, Pocock, Faun. Brit. Ind. Arach.
- S. armatoris*, Travancore, p. 174, Pocock, t. c., n. sp.
- Sasimichus*, n. g. of *Barychelidae*, for *sulicani*, Travancore, p. 177, Pocock, t. c., n. sp.
- Sculidognathus*, g. def., p. 166, *radialis*, *oreophilus*, p. 167, Pocock, t. c.
- Scius cinctipes*, Baton Range, La., p. 101, BANKS, Canad. Ent. xxxii, n. sp.
- Scoloderus gibber*, pl. xxxvi, figg. 4-4d, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Scopocira*, n. g. of *Attidae*, def., p. 385, for *denticelis*, Venezuela, p. 385, *tenella*, Brazil, p. 386, *hiatrio*, Brazil, p. 386, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Seytodes multilineata*, p. 19, *coronatu*, p. 20, Cameroons, THORELL, Bih. Svenska Ak. xxv, n. spp.

- Selenocosmia*, g. def. and key to Indian spp., *himalayana*, p. 200, *fuliginea*, *javanensis*, p. 201, Pocock, Faun. Brit. Ind. Arach.
- Selenops*, g. def., *radiatus*, p. 257, *montigena*, p. 258, Pocock, t. c.
- S. nigromaculatus*, figured, pl. viii, figg. 14 & 14a, *mexicanus*, fig., pl. viii, figg. 17-18b, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- S. marginalis*, Mexico, p. 117, pl. viii, figg. 15 & 16, *minutus*, Guatemala, p. 118, pl. viii, figg. 19-20b, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.; *S. broomi*, Little Namaqualand, p. 331, *pavulus*, Port Elizabeth, p. 332, Pocock, Ann. Nat. Hist. vi : n. spp.
- Sergiolus bicolor*, Covington, La., p. 96, BANKS, Canad. Ent. xxxii, n. sp.
- Sicarius spatulatus*, Port Elizabeth, p. 321, Pocock, Ann. Nat. Hist. vi, n. sp.
- Sillus*, n. g. defined, p. 102, *lunula*, ♀, Guatemala, p. 103, pl. vii, fig. 25, *curvispina*, ♂, Panama, p. 104, pl. vii, figg. 26-28c, *longispina*, ♂, Guatemala, p. 104, pl. vii, fig. 28, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer., n. spp.
- S. attiquus* (= *Clubione attiqua*), ♂ descr., p. 103, pl. vii, figg. 27 & 27a, CAMBRIDGE, t. c.
- Simonella americana*, p. 170, pl. xi, figg. 17-17c, *decipiens*, p. 171, pl. xii, figg. 3-4a, *bicolor*, p. 171, pl. xii, figg. 1-2d, CAMBRIDGE, t. c.
- Sipalolasma*, g. def., p. 176, *elliotti*, Ceylon, p. 177, Pocock, Faun. Brit. Ind. Arach.
- S. greeni*, Ceylon, p. 176, Pocock, t. c., n. sp.
- Smeringopus elongatus*, p. 239, Pocock, t. c.
- S. pacificus*, W. India, *socialis*, S. India, p. 209, Pocock, t. c., n. spp.
- S. africanus*, p. 21, *armatus*, p. 22, THORELL, Bih. Svenska Ak. xxv, n. spp.
- Spariolenus*, g. def., p. 263, *tigris*, Pocock, Faun. Brit. Ind. Arach.
- Sparassus obtusus*, Guatemala, p. 123, pl. ix, figg. 2 & 2a, *stylifer*, Mexico, p. 125, pl. ix, figg. 7 & 7a, *ensiger*, Mexico, p. 125, pl. ix, figg. 12-12b, *annulatus*, Mexico, p. 126, pl. ix, figg. 13-13d, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.; *S. schönlandi*, Grahamstown, p. 330, Pocock, Ann. Nat. Hist. vi; *S. variatus*, p. 65, *pulchripes*, p. 66, *sulphuratus*, p. 67, *consersipes*, p. 69, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Sparassus*, g. def. and key to spp. of India, p. 266, *lamarcki*, *senilis*, *hirtus*, p. 267, *wroughtoni*, *phipsoni*, *impudicus*, *punctipes*, p. 268, *lutescens*, *tener*, *tarandus*, *stimulator*, p. 269, Pocock, Faun. Brit. Ind. Arach.; *S. obscurus*, pl. ix, figg. 3 & 3a, *fugiens*, pl. ix, figg. 4 & 4a, *erroneus*, pl. ix, fig. 5, *manifestus*, pl. ix, fig. 6, *minax*, pl. ix, figg. 8 & 9, *clarus*, pl. ix, figg. 10-11b, *ferrugineus*, pl. ix, fig. 14, figured, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Stasimopus schönlandi*, Grahamstown, p. 319, Pocock, Ann. Nat. Hist. vi, n. sp.
- Stegodyphus*, g. def. and key to spp., p. 208, *mirandus*, *sarasinorum*, p. 209, *tibialis*, p. 210, Pocock, Faun. Brit. Ind. Arach.
- Stenodeza*, n. g. of *Attidae*, def., p. 396, for *acuminata*, Amazons, p. 396, SIMON, Ann. Soc. ent. Belgique xlv, n. sp.
- Stenodina*, n. g. of *Attidae*, for *tenuilineata*, Australia, p. 388, SIMON, t. c., n. sp.
- Storena macedonensis*, Victoria, p. 98, pl. xiv, fig. 4, Hogg, P. Soc. Victoria xiii; *S. decurtata*, Cameroons, p. 12, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Storenosoma*, n. g. of *Zodariidae*, def., for *lycosoides*, p. 95, pl. xiv, fig. 3, Hogg, P. Soc. Victoria xiii, n. sp.
- Strophius hirsutus*, p. 166, pl. xi, figg. 8-8b, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Synema dimidiatipes*, Hawaii, ♀ descr., p. 493, pl. xvii, fig. 3, *fronto*,



- Oahu, ♂ descr., p. 493, *impotens*, Hawaii, ♀ descr., p. 494, *notigerum*, Hawaii, ♂ and ♀ descr. and varieties, p. 494, pl. xvii, fig. 2, SIMON, Fauna Hawaiensis ii, Pt. v, n. spp.
- S. affinitatum*, p. 151, pl. x, figg. 15-17, *palliatum*, p. 151, pl. x, fig. 18, *bimaculatum*, p. 152, pl. x, fig. 19, *maculosum*, p. 152, pl. x, figg. 20 & 21, *socium*, p. 152, pl. x, fig. 22, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Synageles variegata*, Panama, p. 176, pl. xii, figg. 7-8d, CAMBRIDGE, t. c., n. sp.
- Syroloma*, n. g. of *Lyconida*, defined, p. 509, for *major*, Hawaii, ♂ and ♀ descr., p. 509, pl. xviii, fig. 1, *minor*, Molokai, ♂ and ♀ descr., p. 510, pl. xviii, fig. 2, SIMON, Fauna Hawaiensis ii, Pt. v, n. spp.
- Syspira rubicunda*, Victoria, p. 108, pl. xvi, fig. 2, HOGG, P. Soc. Victoria xiii, n. sp.
- Tama eucalypti*, Balmoral, p. 486, pl. xxiii, figg. 2-2e, RAINBOW, P. Linn. Soc. N. S. Wales xxv, n. sp.
- T. variata*, p. 242, POCOCK, Faun. Brit. Ind. Arach.
- Tapinocyba buddebergii*, p. 116, *tenella*, p. 117, Rhine Province, BÖSENBERG, Verh. Ver. Rheinland lvi, n. spp.
- Tapponia cornifrons*, Cameroons, p. 89, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Tetragnatha*, g. def., *gracilis*, p. 214, *geniculata*, *mandibulata*, p. 215, POCOCK, Faun. Brit. Ind. Arach.; *T. digitata*, pl. xxxvi, figg. 11-12a, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- T.*, synopsis of spp. found in Sandwich Is., p. 467, *mandibulata*, figg. of appendages, pl. xix, fig. 7, *kauaiensis*, Kauai, ♂ and ♀ descr., p. 472, pl. xix, fig. 9, SIMON, Fauna Hawaiensis ii, Pt. v.
- T. netris*, Hawaii, ♂ and ♀ descr., p. 468, pl. xix, fig. 6, *havaiensis*, Hawaii, ♀ descr., p. 470, pl. xix, fig. 4, *perkinsi*, Maui, ♂ and ♀ descr., p. 470, pl. xix, fig. 5, *sobrina*, Hawaii, ♂ and ♀ descr., p. 471, pl. xix, fig. 8, *restrita*, Hawaii, ♂ and ♀ descr., p. 473, pl. xix, fig. 10, *uncifera*, Maui, ♂ and ♀ descr., p. 474, pl. xix, fig. 2, *cuneiventris*, Maui, ♂ and ♀ descr., p. 475, pl. xix, fig. 3, SIMON, Fauna Hawaiensis ii, Pt. v, n. spp.
- Tetrilus arietinus*, in nest of *Formica rufa* and *Lasius fuliginosus* [in Britain], CAMBRIDGE, pp. 163, 164, Ent. Rec. xii.
- Teudis peragrans*, Guatemala, p. 101, pl. vii, figg. 21 & 22, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- T. ruber*, Guatemala, ♀ descr., p. 102, pl. vii, fig. 23, *roseus*, Panama, ♀ descr., p. 102, pl. vii, fig. 24, CAMBRIDGE, t. c., n. spp.
- Teutana picea*, Cameroons, p. 26, THORELL, Bih. Svenska Ak. xxv, n. sp.
- T. zonata*, pl. xxxv, figg. 6-7b, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- Thalassius*, g. def., p. 247, *phipsoni*, p. 248, POCOCK, Faun. Brit. Ind. Arach.; *T. rubro-maculatus*, descr., p. 81, THORELL, Bih. Svenska Ak. xxv.
- Theleticopsis*, g. def. and key to Indian spp., *nalandicus*, p. 270, *paripes*, *canescens*, *birmanicus*, *pictus*, p. 271, POCOCK, Faun. Brit. Ind. Arach.
- Theridium*, synopsis of spp. peculiar to the Sandwich Is., p. 499, SIMON, Fauna Hawaiensis ii, Pt. v; *T. hirsutum*, pl. xxxiv, figg. 6-6d, *rotundum*, pl. xxxiv, figg. 7-7d, *vivum*, pl. xxxiv, figg. 8-8c, *album*, pl. xxxiv, figg. 9-9e, *trepidum*, pl. xxxiv, figg. 10-10d, *niveum*, pl. xxxiv, figg. 11-11e, *transversum*, pl. xxxv, figg. 3-4b, *hispidum*, pl. xxxv, figg. 5-5e, *morulum*, pl. xxxv, figg. 6-6c, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- T. bertkau*, Province of the Rhine, p. 114, BÖSENBERG, Verh. Ver. Rheinland lvi; *T. campestratum*, Maui, Sandwich Is., ♀ described, p. 450, pl. xv, fig. 3, *protextum* and var. *concolor*, Hawaii, ♂ and ♀ described,

- p. 450, pl. xv, fig. 4, *mauiense*, Maui, Sandwich IIs., ♂ and ♀ described, p. 452, pl. xv, fig. 11, *haleakalense*, Maui, ♂ and ♀ descr., p. 453, pl. xv, fig. 5, *perkinsi*, Maui, ♂ and ♀ descr., p. 454, pl. xv, fig. 6, *kauaiense*, Kauai, Sandwich IIs., p. 455, pl. xv, fig. 7, ♂ descr., *grallator*, Hawaii, ♂ and ♀ descr., p. 456, pl. xv, fig. 8, *acutiarise*, Kauai, ♂ and ♀ descr., p. 456, pl. xv, fig. 9, *melinum*, Hawaii, ♂ and ♀ descr., p. 457, pl. xv, fig. 10, *posticatum*, Lanai, Sandwich IIs., ♂ and ♀ descr., p. 458, pl. xv, fig. 12, SIMON, Fauna Hawaïiensis ii, Pt. v; *T. scenicum*, p. 24, *tesselatum*, p. 25, *molliculum*, p. 25, THORELL, Bih. Svenska Ak. xxv : n. spp.
- Thiodina*, n. g. of *Attidæ*, def., for *vaccula*, Amazons, p. 392, *germaini*, Brazil, p. 392, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Thomisops pupa*, Cameroons, p. 72, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Thominus odiosus*, pl. xxiv, figg. 5-5d, CAMBRIDGE, O., Arach. Aran. i in Biol. Centr.-Amer.
- T. steningi*, King Williamstown, p. 332, Pocock, Ann. Nat. Hist. vi, n. sp.
- Thyrostenus bioatus*, in Nests of *Formica rufa* [in Britain], CAMBRIDGE, pp. 138, 163, Ent. Rec. xii.
- Tibellus affinis*, p. 133, pl. ix, fig. 23, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Titanattus ævus*, p. 191, pl. xv, figg. 1-1k, CAMBRIDGE, t. c.
- T. pegaseus*, Amazons, p. 382, *juduliani*, Argentina, p. 382, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Tmarus studiosus*, Panama, p. 155, pl. x, fig. 25, *intentus*, Guatemala, p. 155, pl. x, figg. 26 & 27, *ineptus*, Panama, p. 155, pl. x, fig. 28, *mundulus*, Panama, p. 155, pl. x, fig. 29, *decens*, Panama, p. 155, pl. x, fig. 30, *jocosus*, Costa Rica, p. 156, pl. x, fig. 31, *corruptus*, Mexico, p. 156, pl. x, fig. 32, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- T. cancellatus*, Cameroons, p. 71, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Tobias rugosus*, p. 161, pl. x, figg. 37-38c, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- Tomocyrra*, n. g. of *Attidæ*, def., for *decollata*, Madagascar, p. 388, *barbata*, Madagascar, p. 389, SIMON, Ann. Soc. ent. Belgique xlv, n. spp.
- Toxus centralis*, p. 173, pl. xi, figg. 9-11, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer.
- T. championi*, Panama, p. 174, pl. xi, figg. 12 & 13, CAMBRIDGE, t. c., n. sp.
- Tylorida seriata*, Cameroons, p. 34, THORELL, Bih. Svenska Ak. xxv, n. sp.
- Ulesanis oahuensis*, Oahu, Sandwich IIs., ♀ descr., p. 460, pl. xvi, fig. 11, SIMON, Fauna Hawaïiensis, ii, Pt. v, n. sp.
- Uroctea indica*, W. India, p. 243, Pocock, Faun. Brit. Ind. Arach., n. sp.
- Venator*, n. g. of *Lycosidæ*, def., p. 115, *spenceri*, Victoria, p. 116, pl. xvii, fig. 2, *fuscus*, Victoria, p. 118, pl. xvii, fig. 3, *marginatus*, Victoria, p. 120, pl. xvii, fig. 4, HOGG, P. Soc. Victoria xiii, n. spp.
- Viciria longiuscula*, p. 96, *pulchra*, p. 97, *albo-cincta*, *thoracica*, p. 98, THORELL, Bih. Svenska Ak. xxv, n. spp.
- Wulfilia spatulatus*, Guatemala, p. 105, pl. vii, figg. 29 & 29a, CAMBRIDGE, Arach. Aran. ii in Biol. Centr.-Amer., n. sp.
- Xysticus pellar*, p. 147, pl. x, figg. 11 & 12, *faustus*, p. 148, pl. x, fig. 13, CAMBRIDGE, t. c.
- X. norvegicus*, in Skarimodalén, p. 367, *augur*, Nadelholz, p. 368, *sex-angulatus*, Skarimodalén, p. 370, STRAND, Zool. Anz. xxiii, n. spp.

## SOLIFUGÆ.

[See papers under *Arachnida* and the following:—BANKS (5), Pocock (71).  
Order def. and discussed, p. 132, Pocock (68).]

- Blossia setifera*, Salisbury, Mashonaland, p. 301, figg. 6 & 6a, Pocock, Ann. Nat. Hist. v, n. sp.  
*Ceroma pallidum*, Little Namaqualand, p. 305, fig. 7, Pocock, t. c., n. sp.  
*Cleobis andinus*, Inca, p. 359, fig. 3, Pocock, in FITZGERALD'S "The Highest Andes," n. sp.  
*Dania bernardi*, Hex R. Valley, Cape Colony, p. 317, Pocock, Ann. Nat. Hist. vi, n. sp.  
*Galeodes truculentus*, Island on Lake Urmi, p. 402, pl. xxvi, figg. 2 & 2a, Pocock, J. Linn. Soc. xxvii; *G.*, g. def. and key to Indian spp., p. 136, *fatalis*, p. 137, *orientalis*, p. 138, *agilis*, *afghanus*, p. 140, Pocock, Faun. Brit. Ind. Arach.  
*G. orientalis rufulus*, E. Khandesh, p. 139, *ipidicus obscurior*, E. Khandesh, *indicus australis*, Madras, p. 143, Pocock, t. c., n. subsp.  
*G. sabulosus*, Kohat, p. 139, *macmahoni*, p. 141, *indicus*, India, p. 142, *nigripalpis*, Omara, *bacillifer*, N. Baluchistan, p. 144, Pocock, t. c., n. spp.  
*Gluviopsis*, g. def., *atartus*, p. 146, Pocock, t. c.  
*G. atratus*, W. India, p. 303, Pocock, Ann. Nat. Hist. v, n. sp.  
*Pseudocleobis*, n. g. defined, p. 304, for *alticola*, Bolivian Andes, p. 304, figg. 8 & 8a, Pocock, t. c., n. sp.  
*Rhagodes*, g. def. and key to Indian spp., p. 147, *semistylus*, *brevipes*, p. 149, *vittatus*, *nigriceps*, p. 150, *nigrocinctus*, p. 151, *annulatus*, *phipsoni*, p. 152, Pocock, Faun. Brit. Ind. Arach.  
*R. anthracinus*, Somaliland, ♀ descr., p. 301, Pocock, Ann. Nat. Hist. v, n. sp.  
*Sarax*, g. def., *sarawakensis*, p. 131, Pocock, Faun. Brit. Ind. Arach.  
*Solpuga sagittaria*, Mashonaland, p. 299, figg. 5 & 5a, Pocock, Ann. Nat. Hist. v; *S. schönlandi*, Grahamstown, p. 317, Pocock, op. cit. vi : n. spp.

## PSEUDOSCORPIONES.

[See papers under *Arachnida* and the following:—DADAY (35), SIMON (90 & 91); TULLGREN (120 & 121).]

- Atemnus floridanus*, Florida, p. 157, TULLGREN, Ent. Tidskr. xxi, n. sp.  
*Chelifer murrayi*, Christmas Is., p. 156, pl. xvi, figg. 1 & 1a, Pocock in ANDREWS' "Christmas Island."  
*C. aethiopicus*, Agordat, p. 596, SIMON, Ann. Mus. Genova xl; *C. hawaiiensis*, Hawaii, ♂ and ♀ descr., p. 518, SIMON, Fauna Hawaiiensis ii, Part v; *C. patagonicus*, S.W. Patagonia, p. 155; TULLGREN, Ent. Tidskr. xxi : n. spp.  
*Garypus personatus*, Oahu, ♂ and ♀ descr., p. 518, SIMON, Fauna Hawaiiensis ii, Part v; *G. canariensis*, Teneriffe, p. 157, TULLGREN, Ent. Tidskr. xxi : n. spp.  
*Obisium carcinoides*, p. 159, *euchirus*, p. 160, notes, TULLGREN, t. c.

## OPILIONES.

[See papers under *Arachnida* and the following:—APPELT (3), DADAY (35).]

- Lewronychus*, n. g. def. with *Liobunum pacificum* Banks, as type, p. 199, BANKS, J. N. York Ent. Soc. viii.  
*Liobunum crassipalpis*, Washington D. C., ♂ descr., p. 199, *denticulatum*, Mexico, p. 199, *consimilis*, Mexico, p. 200, BANKS, t. c., n. spp.

- Hadrobunus*, n. g. defined with *Phalangium grande* Say, as type, N. America, p. 199, BANKS, t. c.  
*Hoplobunus*, n. g. def. for *barretti*, Mexico, p. 200, BANKS, t. c., n. sp.  
*Mitopus dorsalis*, Alaska, p. 484, pl. xxix, fig. 2, BANKS, P. Washington Ac. ii, n. sp.  
*Scotolemon californica*, Alabaster Cave, California, p. 200, BANKS, J. N. York Ent. Soc. viii, n. sp.

## ACARI.

- [See papers under *Arachnida* generally and the following:—ANON (1), ARTAULT (4), BANKS (7 & 8), BRUCKER & TROUESSART (17), BUFFA (18), CANESTRINI (22, 27), COGGI (33 & 34), FOA (38), GABIONOWSKI (39), GEORGE (40), GIARD (41), HALBERT (42), HARRIS & SOAR (43), KOENIKE (46), LEONARDI (48-50), LEWIS (51), LOUNSBURY (54-56), MICHAEL (57), NALEPA (58 & 59), OUDEMANS (60-64), POCOCK (80), PROTZ (81), ROSTRUP (85), SICHER (88), SOAR (100 & 101), THON (105-107), THOR (108 & 109), TIETZE (111), TROTTER (113 & 114), TROUESSART (115-119), WASMANN (125), WHITE (129), WOLCOTT (130).]
- Acerus ligulifer*, p. 470, pl. xlix, fig. 167, *gibberipalpis*, p. 471, PIERSIG, Bibl. Zool. xxii; *A. ligulifer*, recorded in Britain for the first time, p. 392, SOAR, J. Quekett Club vii; *A. ligulifer*, p. 260, *cassidiformis*, p. 261, *liliaceus*, p. 261, SOAR, Sci. Gossip vi.  
*A. gibberipes*, E. Prussia, p. 600, PROTZ, Zool. Anz. xxiii, n. sp.  
*Agaue exornata*, Djibouti, p. 226, TROUESSART, Bull. Soc. Angers xxix, n. sp. [See also *Halixodes* inf.]  
*Albia*, n. g. for *stationis*, Hungary, descr. and fig., THON, Rozp. Ceske Ak. Prazé viii, Art. 34 & p. 490, pl. xlv, fig. 183, PIERSIG, Bibl. Zool. xxii, n. sp.  
*Amblyomma hebraeum*, notes, p. 41, LOUNSBURY, Bull. U. S. Dep. Agric. Ent. xxvi; life history, p. 336, LOUNSBURY, Ent. News Philad. xi.  
*Antennophorus barbatus*, a Myrmecophilous Gamasid. descr., p. 254, WASMANN, Zool. Jahrb. Syst. xiv, n. sp.  
*Argas persicus*, notes, p. 48, LOUNSBURY, Bull. U. S. Dep. Agric. Ent. xxvi.  
*Arrenurus turbulator*, p. 489, PIERSIG, Bibl. Zool. xxii; *A. regulator*, near Christiania, p. 382, pl. xviii, figg. 28-30, THOR, Nyt Mag. Naturv. xxxviii.  
*A. ornatus*, previously described as *A. viridis*, Duges, p. 204, GEORGE, Sci. Gossip vii; *A. kanei*, Ulster, descr., p. 95, figg., HALBERT, Irish Natural. ix; *A. paluster*, Norway, p. 379, pl. xviii, figg. 25-27, coronator, Christiania, p. 383, pl. xviii, figg. 31 & 32, THOR, Nyt Mag. Naturv. xxxviii : n. spp.  
*Atax crassipes*, p. 363, *taverneri*, p. 364, *figuralis*, p. 365, SOAR, Sci. Gossip vi; *A. intermedius*, p. 18, *bonzi*, *ypsilophorus*, p. 18, SOAR, op. cit. vii.  
*Aturus intermedius*, E. Prussia, p. 598, *natangensis*, E. Prussia, p. 600, PROTZ, Zool. Anz. xxiii, n. sp.  
*Brachioternus alienus*, Argentina, p. 46, LONNBERG, Ergeb. Schwedisch. Exped. Magellansl. ii, n. sp.  
*Bryobia pretiosa*, notes and figg., p. 138, pl., figg. 50-58, OUDEMANS, Tijdschr. Ent. xliii.  
*Camisia fischeri*, Macognaya near Monte Rosa, p. 109, pl. v, figg. 1-5, OUDEMANS, t. c., n. sp.  
*Campylochirus*, g. def., pp. 889 & 901, CANESTRINI, Prospet. Acarof. Ital. vii.  
*Canestrinia*, g. def., p. 905, *blaptis*, p. 908, pl. lxxix, figg. 1-7, *cerambicis*, p. 909, *procrusti*, p. 910, *doricola*, p. 910, pl. lxxx, figg. 1-3, CANESTRINI, t. c.

- Celano modesta*, Portici, p. 924, LEONARDI in CANESTRINI, t. c., n. sp.  
*Celeripes vespertilionis*, descr., p. 122, OUDEMANS, Tijdschr. Ent. xliii.  
*Cepheus pseudosculptus*, Italy, p. 319, COGGI, Bull. Soc. ent. Ital. xxxii; *C. ocellatus*, Frankfurt a-M., p. 21, pls. iii & iv, figg. 1-4, RICHTERS, Ber. Senckenberg. Ges. 1900.  
*Chirodiscus*, g. def., p. 889, *amplexans*, p. 900, pl. xc, figg. 1-5, CANESTRINI, Prospet. Acarof. Ital. vii.  
*Cillibano vegetans*, synonymy and descr., p. 131, pl., figg. 25-36, OUDEMANS, Tijdschr. Ent. xliii.  
*Cochleophorus limosus*, p. 468, PIERSIG, Bibl. Zool. xxii; *C. spinipes*, p. 18, *vernalis*, p. 19, SOAR, Sci. Gossip vii.  
*Coleopterophagus*, g. def., p. 905, *megnini*, p. 907, pl. lxxxi, figg. 1 & 2, *carabicola*, p. 908, pl. lxxxi, figg. 3 & 4, CANESTRINI, Prospet. Acarof. Ital. vii.  
*Curvipes disparilis*, p. 469, PIERSIG, Bibl. Zool. xxii; *C. stjerdalensis*, notes, p. 375, pl. xvii, figg. 20-24, THOR, Nyt Mag. Naturv. xxxviii.  
*C. annulatus*, Brekke, p. 369, pl. xvi, figg. 13-16, *laminatus*, Sørkjosen, p. 371, pl. xvi, figg. 17 & 18, *raropalpis*, Petersborg, p. 374, pl. xvii, fig. 19, THOR, t. c., n. spp.  
*Demodex folliculorum*, p. 965, *caninus*, p. 966, pl. xcvi, *bovis*, p. 967, pl. xcvi, *caprae*, *phyllodes*, *musculi*, p. 968, *cati*, *ovis*, *equi*, p. 969, notes, measurements, occurrence, etc., CANESTRINI, Prospet. Acarof. Ital. vii.  
*Dermacarus arvicole*, descr., p. 126, OUDEMANS, Tijdschr. Ent. xliii.  
*Dermacentor reticulatus*, occurrence in Gt. Britain and notes, p. 326, Pocock, Zoologist lviii.  
*Dicrostichus furcatus*, var. *distinctus*, nov., N. Sydney, p. 492, RAINBOW, P. Linn. Soc. N. S. Wales xxv.  
*Dinychus mitis*, Portici, p. 924; LEONARDI in CANESTRINI's Prospet. Acarof. Ital. viii, n. sp.  
*Discopoma comata*, descr., p. 878, pl. xciii, fig. 1, LEONARDI, op. cit. vii.  
*Eremacus confusus*, p. 163, *subtrigonus*, p. 166, *subpectinatus*, p. 166, *ornatus*, p. 167, notes, OUDEMANS, Tijdschr. Ent. xliii.  
*E. schneideri*, San Remo, p. 136, pl., figg. 41 & 42, *sanremensis*, San Remo, p. 137, pl., figg. 43-47, OUDEMANS, t. c., n. spp.  
*Eriophyes tenuirostris*, p. 202, pl. i, figg. 1 & 2, *annulatus*, p. 203, pl. i, figg. 3 & 4, *granulatus*, p. 204, pl. i, figg. 5 & 6, *pilonotus*, p. 204, pls. i, figg. 7 & 8, iii, fig. 6, *macrotuberculatus*, p. 205, pl. ii, figg. 1 & 2, *ribsaameni*, p. 205, pls. ii, figg. 3 & 4, iii, fig. 5, *minor*, p. 206, pl. ii, figg. 5 & 6, *ajuga*, p. 206, pl. ii, figg. 7 & 8, *convolvuli*, p. 207, pl. iii, figg. 1, 2 & 7, *brevicinctus*, p. 208, pl. iii, figg. 3 & 4, *cerreus*, p. 209, pl. iv, figg. 1 & 2, *ilicis*, p. 210, pl. iv, figg. 3 & 4, *tristernalis*, p. 211, pl. iv, figg. 5 & 6, *linosyrinus*, p. 211, pl. iv, figg. 7 & 8, *stefanii*, p. 212, pl. iv, figg. 9 & 10, *solidus*, p. 213, pl. iv, figg. 11 & 12, *salicis*, p. 213, pl. v, figg. 1 & 2, *triradiatus*, p. 214, pl. v, figg. 3 & 4, *tetanolithrix*, p. 215, pl. v, figg. 5 & 6, *gemmarum*, p. 216, pl. v, figg. 7 & 8, *truncatus*, p. 216, pl. v, figg. 9 & 10, NALEPA, Denk. Ak. Wien lxviii.  
*E. passerina*, on *Passerina hirsuta*, p. 455, NALEPA, Bull. Sci. France Belgique xxxiii; *E. chinensis*, China, p. 179, *bicornis*, S. America, p. 224, TROTTER, Bull. ent. France 1900 : n. spp.  
*Eylais*, key to spp., p. 416, *extendens*, p. 418, pl. xlviii, fig. 119, *discreta*, p. 423, pl. xlviii, fig. 155, *bifurca*, p. 424, *infundibulifera*, p. 424, pl. xlviii, fig. 165, *limnophila*, p. 425, *mutila*, p. 426, pl. xlviii, fig. 161, *hamata*, p. 427, pl. xlviii, fig. 168, *mülleri*, p. 427, pl. xlviii, fig. 153, *setosa*, p. 428, pl. xlviii, fig. 154, *bisinuosa*, p. 429, *undulosa*, p. 430, *triarcuata*, p. 430, *soari*, p. 431, *emarginata*, p. 431, *tantilla*, p. 432, pl. xlviii, fig. 166, *rimosa*, p. 433, PIERSIG, Bibl. Zool. xxii; *E. discreta*, p. 203, *soari*, p. 203, SOAR, Sci. Gossip vii.



- Gamasida*, gen. et sp. ?, p. 952, pl. xcvi, fig. 5, TIEZTZE, in CANESTRINI's Prospet. Acarof. Ital. vii.
- Gamasus*, sp. ?, Malamocco, p. 948, pl. xcvi, figg. 2a-2g, TIEZTZE, in CANESTRINI, t. c.
- Glyciphagus hebeclinii*, on *Hebeclinium macrophyllum*, Sicily, p. 971, pl. xcix, SICHER in CANESTRINI, t. c., n. sp.
- Gnaphiscus setosus*, p. 487, PIERSIG, Bibl. Zool. xxii.
- Hæmaphysalis punctata*, p. 326, occurrence in Gt. Britain and notes, Pocock, Zoologist lviii.
- Halacarus rostratus*, Djibouti, p. 213, *parallelus*, Djibouti, p. 214, *manicatus*, Cochinchina, p. 216, *bidentatus*, Bahia, p. 217, *spinula*, Cochinchina, p. 222, TROUËSSART, Bull. Soc. Angers xxix; *H. manicatus*, Cochinchina, p. 38, *bidentatus*, Bahia, p. 39, *spinula*, Cochinchina, p. 41, TROUËSSART, Bull. Soc. zool. France xxv : n. spp.
- H. gibbus caulifer*, Bahia, p. 40, *gibbus cataphractus*, Indian Ocean, p. 41, *gracilipes largiforatus*, near Marseilles, p. 42, TROUËSSART, Bull. Soc. zool. France xxv; *H. bavaei corallorum*, Djibouti, p. 219, *gibbus caulifer*, Bahia, p. 220, *gibbus cataphractus*, Indian Ocean, p. 221, *gracilipes largiforatus*, Marseilles, p. 223, TROUËSSART, Bull. Soc. Angers xxix : n. subsp.
- Halixodes*, n. g. def., p. 108, for *Agave chitonis*, on the branches of *Acanthochiton porosus*, p. 108, BRUCKER & TROUËSSART, C.R. Soc. Biol. 1900; *H.*, n. g. of *Halacarida*, with *Agave chitonis* Brucker, as type, p. 42, *chitonis*, descr., p. 43, TROUËSSART, Bull. Soc. zool. France xxv; *H.*, n. g. def., p. 223, for *Agave chitonis*, p. 224, TROUËSSART, Bull. Soc. Angers xxix.
- Haptosoma*, g. def., p. 889, *truncatum*, p. 900, CANESTRINI, Prospet. Acarof. Ital. vii.
- Hemisarcoptes*, g. def., p. 904, *coccinugus*, p. 906, pl. lxxi, figg. 1 & 2, CANESTRINI, t. c.
- Histiogaster spermaticus*, parasitic in man, p. 742, TROUËSSART, C.R. Soc. Biol. 1900, n. sp.
- Histiostoma flabelliforme*, Portici, p. 922, LEONARDI in CANESTRINI's Prospet. Acarof. Ital. viii, n. sp.
- Holostaspis*, sp. ? Malamocco, p. 950, pl. xcvi, TIEZTZE in CANESTRINI, t. c.
- H. exilis*, Alaska, p. 485, pl. xxix, fig. 1, BANKS, P. Washington Ac. ii; *H. confusus*, p. 148, *submarginatus*, mentioned on p. 149, FOA, Bull. Soc. ent. Ital. 1900 : n. spp.
- Hyalomma affine*, occurrence in Gt. Britain and notes, p. 327, Pocock, Zoologist lviii; *H. aegyptiacum*, p. 44, notes, LOUNSBURY, Bull. U. S. Dep. Agric. Ent. xxvi.
- Hydrachna*, g. def. and key to spp., p. 436, *levigata*, p. 438, pl. l, fig. 178, *geographica*, p. 439, *denudata*, p. 442, *piernigi*, p. 443, pl. l, fig. 181, *inermis*, p. 444, *scutata*, p. 445, *schneideri*, p. 447, pl. xlix, fig. 164, *leegei*, p. 448, pl. xlix, fig. 163, *maculifera*, p. 450, pl. xlix, fig. 174, *comosa*, p. 451, pl. xlix, fig. 173, *crassipalpis*, p. 452, pl. xlix, fig. 175, *bivirgulata*, p. 453, *regulifera*, p. 453, pl. l, fig. 176, *extorris*, p. 454, *globosa*, p. 455, *distincta*, p. 460, pl. l, fig. 180, *aspratilis*, p. 461, pl. l, fig. 179, PIERSIG, Bibl. Zool. xxii; *H. globosa*, p. 337, *scutata maculifera*, *geographica*, p. 338, SOAR, Sci. Gossip vi.
- Hydryphantus ruber*, descr. p. 233, SOAR, t. c.; *H. ruber*, p. 3, var. *typica* p. 5, pls. i, figg. 1 & 2, ii, fig. 14, var. *tenuipalpis*, p. 12, pl. i, figg. 3 & 4, var. *prolongata*, p. 13, pl. ii, fig. 13, *bayeri*, p. 15, pl. i, figg. 5-9, *hellichi*, p. 17, pl. i, figg. 10 & 11, *dispar*, p. 19, *frichi*, p. 23, pl. i, figg. 12-14, *placationis*, p. 28, pl. ii, figg. 1-4, *flexuosus*, p. 32, pl. ii, figg. 5-7, *octoporus*, p. 35, pl. ii, figg. 8 & 9, THON, Rozp. Ceske Ak. Prazd. viii, Art. 45.
- H. planus*, Hungary, p. 26, pl. ii, figg. 10-12, THON, t. c., n. sp.

- Hygrobat* *polyporus*, p. 473, pl. xlvii, fig. 147, PIERSIG, Bibl. Zool. xxii.
- Hypothonius canestrinii*, Malamocco, p. 948, pl. xciv, figg. 3a-3e, TIETZE, in CANESTRINI's Prospet. Acarof. Ital. viii, n. sp.
- Hypopus*, sp. ?, Malamocco, p. 950, pl. xciv, figg. 2a-2c, TIETZE, in CANESTRINI, t. c.
- Kenikea*, n. g. of *Hydrachnida*, defined, p. 189, for *concaea*, Michigan Lakes, p. 190, pls. xi, figg. 15-21, xii, figg. 23 & 24, WOLCOTT, Tr. Amer. Micr. Soc. xxi, n. sp.
- Krendowskia*, description and discussion of the genus, p. 178, *ovata*, Michigan lakes, descr., p. 181, pl. ix, figg. 1-7, WOLCOTT, t. c., n. sp.
- Labidocarpus*, g. def., p. 888, *rollinati*, p. 897, pl. xci, figg. 1-6, *megalonyx*, p. 899, pl. xci, figg. 7 & 8, CANESTRINI, Prospet. Acarof. Ital. vii.
- Laelaps*, sp. ?, Malamocco, p. 951, pl. xcvi, figg. 3a-3d, TIETZE, in CANESTRINI, t. c.
- L. holothyroides*, Caldonazzo, in nests of *Lasius affinis*, p. 863, pl. xciii, fig. 4, LEONARDI, in CANESTRINI, t. c.; *L. acitonis*, on Brazilian Ant, p. 256, WASMANN, Zool. Jahrb. Syst. xiv : n. spp.
- Lebertia polita*, p. 474, *rugosa*, p. 475, *papillosa*, p. 476, PIERSIG, Bibl. Zool. xxii; *L.*, notes on known spp., p. 267, THOR, Nyt Mag. Naturv. xxxviii.
- L. 20-maculata*, Hammerfest, p. 273, pl. x, figg. 1 & 2, *porosa*, Vanse Kirche, p. 273, pl. x, figg. 4 & 5, *contracta*, Throndhjem, p. 274, pl. x, figg. 5 & 6, *stigmatifera*, Hammerfest, p. 275, pl. x, figg. 7-9, THOR, t. c., n. spp.
- Leucasiella*, nom. nov. for *Rhyncolophus* (part), synonymy, p. 32, BANKS, Canad. Ent. xxxii.
- Liacarus pterotus*, Bologna, p. 322, COGGI, Bull. Soc. ent. Ital. xxxii.
- Limnochares*, g. def., p. 462, *holosericea*, p. 463, PIERSIG, Bibl. Zool. xxii; *L. holosericea*, p. 85, SOAR, Sci. Gossip vii.
- Linocoptes*, g. def., p. 905, *coccinella*, pl. lxxviii, figg. 1-7, CANESTRINI, Prospet. Acarof. Ital. vii.
- Listrophorus*, g. def., p. 888, *gibbus*, p. 890, pl. lxxxv, figg. 1-7, *leuckarti*, p. 891, pls. lxxxvi, figg. 2-5, lxxxix, fig. 1, *mustela*, p. 892, pl. lxxxvii, figg. 1-5, *pagenstecheri*, p. 892, pl. lxxxviii, figg. 1-5, described, CANESTRINI, t. c.
- Macrobatus ornatus*, Frankfort a M., descr. and vars., p. 40, pl. vi, RICHTERS, Ber. Senckenberg. Ges. 1900, n. sp.
- Macrocheles marginatus*, descr. of stages, p. 129, pl., figg. 1-22, OUDEMANS, Tijdschr. Ent. xliii.
- Midea elliptica*, p. 85, SOAR, Sci. Gossip vii.
- Myocoptes*, g. def., p. 888, *musculus*, p. 893, pl. lxxxiii, figg. 1 & 2, *glirinus*, p. 894, pl. lxxxii, figg. 1-8, *cricti*, p. 895, pl. lxxxiv, figg. 1-4, *tenax*, p. 896, pl. lxxxvi, fig. 1, CANESTRINI, Prospet. Acarof. Ital. vii.
- Notaspis lemnae*, on Duck-weed, Bologna, p. 916, pl. xcv, COGGI, in CANESTRINI's Prospet. Acarof. Ital. viii; *N. subglobulus*, descr., p. 158, OUDEMANS, Tijdschr. Ent. xliii; *N. schneideri*, San Remo, p. 89, *sanremoensis*, San Remo, p. 90, OUDEMANS, Zool. Anz. xxiii : n. spp.
- N. alatus*, *eliminatus* and *lanceatus*, remarks and synonymy, p. 159, OUDEMANS, Tijdschr. Ent. xliii.
- Ophiocamptus muscicola*, Frankfort a M., p. 36, pl. iv, figg. 5-10, RICHTERS, Ber. Senckenberg. Ges. 1900, n. sp.
- Oribata alzanii*, Bologna, p. 309, *ornata*, Monte Laziali, p. 312, COGGI, Bull. Soc. ent. Ital. xxxii, n. spp.
- Orinthodoros savignyi*, notes, p. 47, LOUNSBURY, Bull. U. S. Dep. Agric. Ent. xxvi.
- Oxus ovalis*, p. 482, *oblongus*, p. 483, *tenuissetus*, p. 484, pl. xlvii, fig. 146, *nodigerus*, p. 485, *longissetus*, p. 486, PIERSIG, Bibl. Zool. xxii.
- O. plantaris*, near Christiania, p. 277, pl. xi, figg. 10-12, THOR, Nyt Mag. Naturv. xxxviii, n. sp.

- Paniscus michaeli*, p. 407, *torrenticolus*, p. 408, pl. xlix, fig. 159, PIERSIG, Bibl. Zool. xxii.
- Partnunia angusta*, p. 410, PIERSIG, t. c.
- Phytoptus triradiatus*, p. 243, figg. 1 & 2, pl. ii, ROSTRUP, Vid. Medd. 1900.
- Phyllocoptes phytoptoides*, p. 244, pl. ii, figg. 3 & 4, *parvus*, p. 244, pl. ii, fig. 5, *pedicularis*, p. 246, pl. ii, figg. 10 & 11, *rhodiola*, p. 246, pl. ii, fig. 12, ROSTRUP, t. c.
- P. grænländicus*, p. 245, pl. ii, figg. 6-9, *saxifragæ*, p. 247, pl. ii, fig. 13, *empetri*, p. 248, pl. ii, figg. 14-16, ROSTRUP, t. c., n. spp.
- Piernigia limophila*, p. 434, pl. xlv, fig. 136, PIERSIG, Bibl. Zool. xxii.
- Piona ornata*, *latipes*, p. 48, SOAR, Sci. Gossip vii.
- Pionacercus leuckarti*, p. 302, *uncinatus*, p. 303, *vatraz*, p. 303, SOAR, op. cit. vi.
- Pionopsis lutescens*, p. 84, SOAR, op. cit. vii.
- Podocinum pacificum* pl. xcii, fig. 3, LEONARDI, in CANESTRINI's Prospet. Acarof. Ital. vii.
- Pacilochirus spinipes*, descr., p. 134, figg. 38-40, OUDEMANS, Tijdschr. Ent. xliii.
- Prosopodectes*, n. g. of *Psoroptida*, def., p. 911, for *Sarcoptes chiropteralis* Trt., CANESTRINI, Prospet. Acarof. Ital. vii.
- Protzia eximia*, p. 412, pl. xlv, fig. 143, *invalvaria*, p. 413, pl. xlv, fig. 137, PIERSIG, Bibl. Zool. xxii.
- Psoralgæ*, g. def. and discussed, p. 911, CANESTRINI, Prospet. Acarof. Ital. vii.
- Rhagidia*, synonymy, p. 30, BANKS, Canad. Ent. xxxii.
- Rhipicephalus decloratus*, notes, p. 45, *evertsi*, notes, p. 46, LOUNSBURY, Bull. U. S. Dep. Agric. Ent. xxvi.
- R. marmoreus*, W. Somaliland, p. 50, pl. iii, figg. 1-1d, *armatus*, W. Somaliland, p. 50, pl. iii, figg. 2-2f, Pocock, P. Z. S. 1900, n. spp.
- Rhombognathus trionyx*, Terra del Fuego, p. 210, TROUESSART, Bull. Soc. Angers xxix; Terra del Fuego, p. 38, TROUESSART, Bull. Soc. zool. France xxv : n. sp.
- R. magnirostris lionyx*, St. Waast la Hongue, p. 38, TROUESSART, t. c. n. subsp.
- Rhyncholophus pulchellus*, in nest of *Lasius alienus* var. [Civezzano, Trentino], p. 881, LEONARDI, in CANESTRINI's Prospet. Acarof. Ital. vii, n. sp.
- Schizocarpus*, g. def., p. 889, *mingaudi*, p. 899, CANESTRINI, Prospet. Acarof. Ital. vii.
- Scutovertex bidactylus*, Sardinia, p. 315, COGGI, Bull. Soc. ent. Ital. xxxii.
- S. spoofi*, Abo, Finland, p. 112, pl. v, figg. 6-16, OUDEMANS, Tijdschr. Ent. xliii, n. sp.
- Scyphius*, synonymy, p. 30, BANKS, Canad. Ent. xxxii.
- Seius spathuliger*, Portici, p. 923, LEONARDI in CANESTRINI's Prospet. Acarof. Ital. viii, n. sp.
- Simognathus coutieri*, Djibouti, p. 211, TROUESSART, Bull. Soc. Angers xxix, n. sp.
- Sperchon hispidus*, ♀ descr., p. 284, pl. xii, figg. 1-4, *thori*, nom. nov. for *hispidus* Thor ♂, p. 288, pl. xii, figg. 5-10, *tenuabilis*, nom. nov. for *hispidus* Thor ♀, p. 292, pl. xii, fig. 11-16, KOENIKE, Nyt Mag. Naturv. xxxviii; *S. brevisrostris*, p. 477, pl. xlvii, fig. 148, *mutilus*, p. 478, pl. xlvii, fig. 149, *denticulatus*, p. 479, pl. xlvii, fig. 150, *longirostris*, p. 481, pl. xlvii, fig. 152, PIERSIG, Bibl. Zool. xxii; *S. squamosus*, *setiger*, p. 234, SOAR, Sci. Gossip vi.
- Stigmaeus floridanus*, in leaves of Pineapple, Florida, p. 77, BANKS, Bull. U. S. Dep. Agric. Ent. tech. No. 8, 1900; *S. crassirostris*, Portici, p. 927, LEONARDI in CANESTRINI's Prospet. Acarof. Ital. viii : n. spp.



- Tanaognathus*, n. g. of *Hydrachnida*, defined, p. 193, for *spinipes*, Michigan Lakes, p. 194, pls. xi, fig. 22 and xii, figg. 25-28, WOLCOTT, Tr. Amer. Micr. Soc. xxi, n. sp.
- Tetranychus telarius*, var. *russeolus*, accidental parasitism on Man, p. 115, ARTAULT, Arch. parasit. iii; *T.*, key to spp., p. 70, *mytilaspidis*, p. 71, *bicolor*, p. 72, *bimaculatus*, p. 73, *telarius*, *seamaculatus*, p. 75, BANKS, Bull. U. S. Dep. Agric. Ent. tech. 1900.
- T. gracilipes*, Phoenix, Ariz., p. 72, *modestus*, Washington, D.C., p. 73, *tumidus*, Eustis, Fla., p. 73, *desertorum*, Mesilla Park, N. Mex., p. 76, *glaveri*, Baton Range, La., p. 76, BANKS, t. c. : n. spp.
- Thyas thoracata*, p. 403, pl. xlv, fig. 130, *oblonga*, p. 404, pl. xlv, fig. 142, *stolli*, p. 405, pl. xlix, fig. 157, PIERSIG, Bibl. Zool. xxii.
- T. pustulosa*, near Tromsø, p. 385, pl. xviii, figg. 33-36, THOR, Nyt Mag. Naturv. xxxviii, n. sp.
- Thyopsis cancellata*, p. 409, pl. xlix, fig. 159, PIERSIG, Bibl. Zool. xxii.
- Torrensicolor anomala*, recorded in Britain for the first time, p. 393, SOAR, J. Quekett Club vii.
- Trichobius*, n. g. of *Listrophoridae*, def., p. 888, for (*Myocoptes*) *brevipes*, p. 897, pl. lxxxix, figg. 2-4, CANESTRINI, Prospet. Acarof. Ital. vii.
- Trichotarsus*, notes on g. and key to spp., pp. 375-377, *manicati*, in *Anthidium manicatum*, Wimereux, p. 375, GIARD, Bull. Soc. ent. France 1900; *T. clypeatus*, Malainocco, p. 947, pl. xciv, figg. 1a-1e, TIETZE in CANESTRINI's Prospet. Acarof. Ital. viii; *T. alfkeni*, Japan, p. 115, pl. figg. 18 & 19, *japonicus*, Japan, p. 117, *ornatus*, Japan, p. 117, pl. figg. 22 & 23, all on *Xlocopa circumvolans*, OUDEMANS, Tijdschr. Ent. xliii : n. spp.
- Trombidium canestrinii*, Trentine Alps, p. 975, pl. c, BUFFA in CANESTRINI's Prospet. Acarof. Ital. viii, n. sp.
- Uropoda ovalis*, redescrib. and figd., p. 115, pl., fig. 17, *obscura*, notes, p. 131, pl., figg. 23 & 24, OUDEMANS, Tijdschr. Ent. xliii; *U. magna*, descr., p. 874, pl. xciii, fig. 2, *coccinea*, p. 870, pl. xcii, figg. 4 & 5, *riccardiana*, descr., pl. xcii, fig. 1, p. 872, LEONARDI in CANESTRINI's Prospet. Acarof. Ital. vii.
- U. michaeliana*, in nest of *Lasius alienus* var. (Civezzano, Trentino), p. 876, pl. xcii, fig. 2, LEONARDI, t. c., n. sp.
- Uroseius ovatus*, Ants' nests, Portici, p. 868, pl. xciii, fig. 3, LEONARDI in CANESTRINI, t. c., n. sp.
- Xystonotus*, n. g. of *Hydrachnida*, defined, p. 105, for *asper*, Lake St Clair, Michigan, p. 186, pl. x, figg. 8-14, WOLCOTT, Tr. Amer. Micr. Soc. xxi, n. sp.

## TARDIGRADA.

[See DADAY (36).]

# XII. MYRIOPODA AND PROTO- TRACHEATA.

BY

ALBERT WILLIAM BROWN, B.A., F.L.S.

## CONTENTS.

	Page		Page
INTRODUCTION . . . . .	1	PROTOTRACHEATA.	
MYRIOPODA.		I. TITLES . . . . .	9
I. TITLES . . . . .	2	II. BIOLOGY . . . . .	10
II. BIOLOGY . . . . .	4	III. DISTRIBUTION . . . . .	11
III. DISTRIBUTION . . . . .	4	IV. SYSTEMATIC . . . . .	11
IV. SYSTEMATIC.			
Chilopoda . . . . .	5		
Pauropoda (vacant) . . . . .	6		
Diplopoda . . . . .	6		

## INTRODUCTION.

THE Record of Myriopoda for 1900 shows very little change from its predecessors. The group, perhaps by reason of its difficulty, does not attract many specialists, though increased study of it is much to be desired.

The largest paper of the year is the second part of ATTEM'S "System der Polydesmiden." VERHOEFF continues his papers on Palaearctic Myriopoda and a number of papers have been published by H. W. BRÖLEMANN. Beyond these there is nothing calling for special mention in the Introduction.

The Recorder, following the plan he has adopted for some years in this and other Arthropod Records, has arranged all the genera of Diplopoda

alphabetically instead of under their respective families. It seems impossible to arrange the genera in any other way so that it may be of use to systematists, and the most desirable method of arrangement is that which avoids the region of controversy altogether.

The Record of Prototracheata is the largest and in some ways the most important yet compiled by the Recorder.

## MYRIOPODA.

### I. TITLES.\*

1. ABSOLON, K. Einige Bemerkungen über mährische Höhlenfauna. Zool. Anz. xxiii, pp. 1-6, 57-60, 189-195.
2. ATTEMS, C. G. Ueber die Färbung von Glomeris und Beschreibung neuer oder wenig bekannter palaearktischer Myriopoden. Arch. Naturg. lvi, pp. 297-320, pls. xi & xii.
3. ——. System der Polydesmiden. II Theil. Denk. Ak. Wien lxviii, pp. 251-435, pls. xii-xvii.
4. BANKS, N. A list of works on North American Entomology. Bull. U. S. Dep. Agric. Ent. No. 24, 1900, pp. 95. [Myriopoda, pp. 76 & 77.]
5. BAYERN, THERESE PRINZESSIN VON. In Südamerika gesammelte Myriapoden und Arachnoideen. Zool. Anz. xxiii, pp. 279-286, 2 figg. in text. [Descriptions of n. sp. by ATTEMS.]
6. BÉHAL & PHISALIX, C. La quinone, principe actif du venin du *Iulus terrestris*. C. R. Soc. Biol. 1900, pp. 1036-1038.
7. \*BERLESE, A. Danni causati dall' *Iulus flavipes*. Bull. Ent. Agrar. vi, pp. 101-103.
8. BRÖLEMANN, H. W. Myriapodes cavernicoles. Descriptions d'espèces nouvelles. Ann. Soc. ent. France lxi, pp. 73-81, 6 figg. in text.
9. ——. Dous myriapodos notaveis do Brazil. Bol. Mus. Para iii, pp. 65-71, 3 figg. in text.
10. ——. Myriapodes recueillis en Espagne par le P. J. Pantel. Bull. Soc. ent. France 1900, pp. 131-133, 4 figg. in text.
11. ——. Matériaux pour servir à une faune des Myriapodes de France. Feuille Natural. xxx, pp. 199 & 200, 216-220, fig. in text.
12. ——. Sur le Travail du Dr Verhoeff intitulé: Über Doppelmännchen bei Diplopoden." Mem. Soc. zool. France xiii, pp. 59-64.
13. ——. Myriapodes d'Amerique. T. c. pp. 89-131, pls. vi-viii.
14. ——. Voyage de M. Ch. Alluaud aux Iles Canaries (Nov. 1889—Juin 1890) Myriapodes. T. c. pp. 431-452, pl. xi.
15. ——. Notes Myriapodologiques. Zool. Anz. xxiii, pp. 181-184, 3 figg. in text.
16. ——. A propos des "Doppelmännchen." T. c. pp. 630-634.

---

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

17. DADAY, E. Myriopoda, in Fauna Regni Hungariae, iii, Arthropoda, pp. 11.
18. HEMENWAY, J. The structure of the Eye of *Scutigera* (*Cermatia*) *forcep*. Biol. Bull. i, pp. 204-213, figg. in text.
19. LATZEL, R. Zwei neue Myriopoden aus dem Mittelmeergebiete. Zool. Anz. xxiii, pp. 520-522.
20. MARIANI, G. Sulla fauna di serra. Boll. Nat. xx, pp. 89-92.
21. PHISALIX, C. Un venin volatil. Sécrétion cutanée du *Iulus terrestris*. C.R. Soc. Biol. 1900, pp. 1033-1036.
22. POCOCK, R. I. Contributions to the Natural History of Lake Urmī, N. W. Persia and Neighbourhood. Report on the *Chilopoda* and *Arachnida* collected. J. Linn. Soc. xvii, pp. 399-406, pl. xxvi. (Edited by Gunther, R. T.)
23. —. On two English Millipedes (*Iulus londinensis* Leach and *Iulus teutonicus*, n. sp.). Ann. Nat. Hist. (Ser. vii), vol. vi, pp. 206 & 207.
24. ROTHENBÜHLER, H. Zweiter Beitrag zur Kenntnis der Diplopodenfauna der Schweiz. Rev. Suisse Zool. viii, pp. 167-192, pl. xiii.
25. SHERBORN, C. D. An Index to the Generic and Trivial Names of Animals described by Linnaeus in the 10th and 12th editions of his Systema Naturae. Manchester Museum Handbooks, publ. xxv, pp. 108. Manchester, 8vo, 1899.
26. SILVESTRI, F. Anche *Projapys styliifer*, O. F. Cook nella R. Argentina. Nuovo genere di *Polyxenidae*. Zool. Anz. xxiii, pp. 113 & 114.
27. \*STROZZI, D. Altre accuse contro gli *Iulus*. Bull. Ent. Agrar. vi, p. 40.
28. VERHOEFF, C. W. Diplopodenfauna Siebenbürgens (2. vermehrte Ausgab.) Arch. Naturg. lxvi, pp. 205-230.
29. —. Beiträge zur Kenntniss paläarktischer Myriopoden.  
xiii. Zur vergleichenden Morphologie, Phylogenie, Gruppen- und Art-systematik der *Ascospermophora*. T. c. pp. 347-402, pls. xv-xviii.
30. —. xiv. Über Glomeriden. T. c. pp. 403-413.
31. —. Über Doppelmännchen bei Diplopoden. Zool. Anz. xxiii, pp. 29-32, 33-46, 4 figg. in text.
32. —. Wandernde Doppelfüssler, Eisenbahnzügehemmend. T. c. pp. 465-473.
33. —. Über *Schendyla* und *Pectinunguis*. T. c. pp. 483-486.
34. —. Unerhörte Nährweise eines Diplopoden. T. c. pp. 541-543.
35. —. Ein unbekanntes Merkmal junger Iuliden. T. c. pp. 551-553, 1 fig. in text.

## II. BIOLOGY.

Structure of the Eye of *Scutigera*, p. 204, HERMESWAY (18).

Intermediate males of *Diplopoda*, p. 29, VERHOEFF (31); Intermediate males in Myriopoda, BRÖLEMANN (16); Criticism of Verhoeff's papers on intermediate males in the Diplopoda, BRÖLEMANN (12).

Active principle of the poison of *Iulus terrestris*, BÉHAL & PHIBALIX (6).

Cutaneous secretion of *Iulus terrestris*, PHISALIX (21).

Emission of a brownish fluid by a sp. of *Iulus* when irritated, p. 353, STEAD, Zoologist lviii.

Offensive secretion of *Trigoniulus goëssii*, p. 183, BRÖLEMANN (15).

List of genera and spp. of *Polydesmoidea*, pp. 396-415; ATTEMS, Denk. Ak. Wien lxviii.

Distribution of *Glomeris*; ATTEMS (2).

## III. DISTRIBUTION.

## i. LOCAL FAUNÆ.

Myriopoda of Caves: ABSOLON (1).

Palæarctic: *Myriopoda*, VERHOEFF (29 & 30).

Scotland: *Myriopoda*, p. 127, EVANS, Ann. Scott. Nat. Hist. ix.

France: *Myriopoda*, BRÖLEMANN (11).

Spain (Cuenca): *Myriopoda*, BRÖLEMANN (10).

Switzerland: *Myriopoda*, ROTHENBÜHLER (24).

Canary Is.: *Myriopoda*, BRÖLEMANN (14).

Siebenbürgen: *Diplopoda*, VERHOEFF (28).

Hungary: *Myriopoda*, DADAY (17).

## ii. DISTRIBUTION OF THE NEW SPECIES.

*Palæarctic Region.*

Palæarctic: 12 n. spp. (incl. n. g.) of *Myriopoda*, VERHOEFF (29).

Europe: 3 n. spp. of cavernicolous *Myriopoda*, BRÖLEMANN (8).

England: n. sp. of *Iulus*, p. 206, POCOCK (23).

France: n. sp. of *Blaniulus*, p. 199, n. sp. of *Ceratosoma*, p. 200, BRÖLEMANN (11).

Cuenca: n. sp. of *Polydesmus*, BRÖLEMANN (10).

Switzerland: 2 n. spp. (incl. n. g.) and 3 n. subsp. of *Myriopoda*, ROTHENBÜHLER (24).

Austria: n. subsp. of *Mastigophorophyllum*, p. 314, ATTEMS (2).

San Remo: n. sp. of *Iulus*, p. 521, LATZEL (19).

Corsica: n. sp. of *Craspedosoma*, p. 521, LATZEL (19).

Roumania: n. sp. of *Schendyla*, p. 485, VERHOEFF (33).

Tunis: n. sp. of *Mecistocephalus*, p. 317, ATTEMS (2).

Seir: n. sp. of *Lithobius*, POCOCK (22).

Japan: n. sp. of *Fontaria*, p. 260, ATTEMS (3).

Canary Is.: n. sp. of *Geophilus*, p. 438, 5 n. spp. of *Pachyiulus*, pp. 442-449, BRÖLEMANN (14).

*Ethiopian, Oriental, and Australasian Regions.*

- Africa : n. sp. of *Oxydesmus*, p. 291, ATTEMS (3).  
 E. Africa : n. sp. of *Eurydesmus*, p. 269, n. sp. of *Dodekaporus*, n. g., p. 275, 2 n. spp. of *Oxydesmus*, pp. 293-295, ATTEMS (3).  
 Cameroons : n. sp. of *Oxydesmus*, p. 291, n. sp. of *Odontotrepis*, n. g., p. 309, ATTEMS (3).  
 Gaboon : n. sp. of *Oxydesmus*, p. 299, ATTEMS (3).  
 Kribi : n. sp. of *Oxydesmus*, p. 298, ATTEMS (3).  
 Liberia : n. sp. of *Oxydesmus*, p. 295, ATTEMS (3).  
 Malange : n. sp. of *Oxydesmus*, p. 294, ATTEMS (3).  
 Saida : n. sp. of *Schendyla*, p. 485, VERHOEFF (33).  
 Sanger : n. sp. of *Platyrrhacus*, p. 331, ATTEMS (3).  
 Satanga : n. sp. of *Platyrrhacus*, p. 333, ATTEMS (3).  
 Tanganyika : n. sp. of *Oxydesmus*, p. 300, ATTEMS (3).  
 Togo : n. sp. of *Oxydesmus*, p. 297, ATTEMS (3).  
 Zanzibar : n. sp. of *Eurydesmus*, p. 268, ATTEMS (3).  
 E. Sumatra : n. sp. of *Platyrrhacus*, p. 334, ATTEMS (3).  
 N. Guinea : n. sp. of *Platyrrhacus*, p. 326, ATTEMS (3).  
 Pelew Is. : n. sp. of *Platyrrhacus*, p. 325, ATTEMS (3).

*Nearctic and Neotropical Regions.*

- N. Carolina : n. sp. of *Fontaria*, p. 123, BRÖLEMANN (13).  
 Illinois : n. sp. of *Fontaria*, p. 312, ATTEMS (3).  
 Martinique : n. sp. of *Rhinocricus*, p. 93, BRÖLEMANN (13).  
 Panama : n. sp. of *Rhinocricus*, p. 107, BRÖLEMANN (13).  
 Guatemala : n. sp. of *Rhinocricus*, p. 107, n. sp. of *Lithobius*, p. 96, n. sp. of *Platyrrhacus*, p. 97, n. sp. of *Cyclorhabdus*, p. 98, n. sp. of *Fontaria*, p. 101, n. sp. of *Leptodesmus*, p. 103, n. sp. of *Platydesmus*, p. 112, BRÖLEMANN (13).  
 Costa Rica : n. sp. of *Euryurus*, p. 279, ATTEMS (3).  
 Colombia : n. sp. of *Platyrrhacus*, p. 121, n. sp. of *Leptodesmus*, p. 116, BRÖLEMANN (13); n. sp. of *Spirostreptus*, ATTEMS in (5), p. 283.  
 Bogota : n. subsp. of *Aphelidesmus*, p. 122, BRÖLEMANN (13).  
 Brazil : n. sp. of *Cryptodesmus*, p. 364, 2 n. spp. of *Katantodesmus*, pp. 385 & 386, ATTEMS (3); n. sp. of *Odontotropis*, p. 65, n. sp. of *Trigoniulus*, p. 68, BRÖLEMANN (9).  
 Venezuela : n. sp. of *Trachelodesmus*, n. g., p. 252, n. sp. of *Euryurus*, p. 278, ATTEMS (3).  
 Argentina : n. g. of *Polyxenidae*, SILVESTRI (26).  
 Peru : 2 n. spp. of *Pachyurus*, pp. 282 & 283, ATTEMS (3).  
 S. America : n. sp. of *Platyrrhacus*, p. 120, BRÖLEMANN (13).

## IV. SYSTEMATIC.\*

*CHILOPODA.*

- Geophilus godmani*, notes on a ♀ from Guatemala, p. 96, pl. vi, figg. 15-17, BRÖLEMANN, Mem. Soc. zool. France xiii.  
*G. zograffi*, Canaries, p. 438, pl. xi, figg. 1-5, BRÖLEMANN, t. c., n. sp.  
*Linolenia maritima*, occurrence in Somerset, p. 484, Pocock, Zoologist lviii.

\* Where the character of a reference is not indicated the words "described" or "descriptive notes" are to be understood.

- Léishium pentameria*, Guatemala, descr., p. 94, BRÖLEMANX, Mem. Soc. zool. France xiii; *L. perniciosa*, Sicr., p. 304, PODICK, J. Linn. Soc. xvii, n. spp.  
*Mecistomorphus agrionda*, Tunisia, p. 317, ATTEMS, Arch. Naturg. lvi, n. sp.

## PAUROPODA.

(Vacant.)

## DIPLOPODA.

- Allochordeum*, n. g. of *Chordeumida*, def. p. 174, for *pallidum*, Switzerland, p. 176, pl. viii, pp. 7, 8, & 10, ROTHENBÜHLER, Rev. Suisse Zool. viii.  
*Anthroherpisma kyalopa*, descr., p. 301, figg. 45 & 46, VERHOEFF, Arch. Naturg. lvi.  
*Aphididesmus hermaphroditus*, Bogota, p. 122, pl. viii, figg. 110-114, BRÖLEMANX, Mem. Soc. zool. France xiii, n. subsp.  
*Atractosoma gibberosum*, Lake Lugano, p. 376, figg. 6-10, *berlesei*, Vallombrosa, p. 379, figg. 17-19, *berlesei serratum*, Tivoli, p. 380, figg. 20 & 21, *abnorme*, Marin, p. 381, figg. 22 & 23, VERHOEFF, Arch. Naturg. lvi, n. spp.  
*A. meridionale*, descr., p. 378, figg. 11-14, *confine*, descr., p. 379, figg. 15 & 16, VERHOEFF, t. c.; *A. meridionale*, Switzerland, p. 181, pl. xiii, figg. 1 & 16, ROTHENBÜHLER, Rev. Suisse Zool. viii.  
*Blaniulus virei*, near Ganges (Hérault), p. 77, BRÖLEMANX, Ann. Soc. ent. France lxi; *B. pegerimhoffi*, High Alps, p. 199, BRÖLEMANX, Feuille Natural. xxx : n. spp.  
*Brachydesmus*, key to spp., p. 432, ATTEMS, Denk. Ak. Wien lxviii.  
*Ceratoma gallitarum*, Allos, pp. 200 & 216, BRÖLEMANX, Feuille Natural. xxx; *C. caroli*, Switzerland, p. 182, pl. xiii, figg. 2, 4, 17 & 22, ROTHENBÜHLER, Rev. Suisse Zool. viii : n. spp.  
*Chordeuma silvestre*, descr., p. 376, pl. figg. 1-5, VERHOEFF, Arch. Naturg. lvi.  
*Craspedosoma blaniulides*, Corsica, p. 521, LATZEL, Zool. Anz. xxiii; *C. vittigerum*, Vallombrosa, p. 385, figg. 31 & 32, *helveticum*, Gemmi, p. 388, figg. 37 & 38, VERHOEFF, Arch. Naturg. lvi : n. spp.  
*C. raulinsii serratum*, Switzerland, p. 180, ROTHENBÜHLER, Rev. Suisse Zool. viii, n. subsp.  
*C. raulinsii simile*, descr., p. 180, pl. xiii, fig. 12, ROTHENBÜHLER, t. c.  
*Cryptoporus*, g. def. and spp. descr., p. 312, ATTEMS, Denk. Ak. Wien lxviii.  
*Crytodesmus pusillus*, Brazil, p. 364, pl. xv, figg. 352-355, ATTEMS, t. c., n. sp.  
*C. gabonicus*, p. 366, pl. xv, figg. 366 & 367, ATTEMS, t. c.  
*Cyclorhynchus*, gen. defined, *contortus*, Guatemala, descr., p. 98, pl. vi, figg. 21-25, BRÖLEMANX, Mem. Soc. zool. France xiii, n. sp.  
*Cylindroiulus fulviceps*, descr., p. 305, pl. i, fig. 8, pl. ii, figg. 16-18, ATTEMS, Arch. Naturg. lvi.  
*Cyrtodesmus asper*, p. 381, pl. xv, fig. 356, ATTEMS, Denk. Ak. Wien lxviii.  
*Dactylophurosoma*, n. g. of *Chordeumida*, def. for *nivisatelles*, Bozen, p. 381, VERHOEFF, Arch. Naturg. lvi.  
*Diaphorodesmus*, g. def. and *dorsicornis* descr., p. 310, pl. vii, fig. 167, ATTEMS, Denk. Ak. Wien lxviii.

- Dodekaporus*, n. g. of *Eurydesminæ*, p. 275, for *tananus*, E. Africa, p. 275, pl. xi, figg. 284 & 285, ATTEMS, t. c., n. sp.
- Eurydesmus*, g. and subgg. def. and spp. descr., p. 263 et seq., *laxus*, p. 267, pl. xii, fig. 279, *oxygonus*, p. 272, pl. xii, figg. 281-283, ATTEMS, t. c.
- E. diminutus*, Zanzibar, p. 268, pl. xii, fig. 278, *wabonicus*, E. Africa, p. 269, pl. xii, fig. 277, ATTEMS, t. c., n. spp.
- Euryurus*, g. def., p. 277, list of spp., p. 280, ATTEMS, t. c.
- E. aterrimus*, Venezuela, p. 278, pl. vii, fig. 162, *glaphyros*, Costa Rica, p. 279, pl. vii, figg. 163 & 164, ATTEMS, t. c., n. spp.
- Fontaria*, g. def., p. 257, *montezumæ*, p. 258, *tapanecus*, p. 259, pl. xiii, fig. 313, *fraternus*, p. 260, list of other spp., p. 261, ATTEMS, t. c.; *F.* g. discussed, p. 99, *coriacea*, figg., pl. vi, figg. 25-27, *crassicutis*, pl. vi, figg. 28 & 29, *simoni*, pl. vi, fig. 30, *stricta*, pl. vi, fig. 31, *hispidipes*, pl. vi, fig. 32, sp. xl, p. 102, BRÖLEMANN, Mem. Soc. zool. France xiii.
- F. laticollis*, Illinois, p. 258, pl. xiii, fig. 312, *tonominea*, C. Japan, p. 260, ATTEMS, Denk. Ak. Wien lxviii; *F. violacea*, Guatemala, p. 101, pl. vi, figg. 33-36, *latior*, N. Carolina, p. 123, pl. vi, figg. 37-42, BRÖLEMANN, Mem. Soc. zool. France xiii, n. spp.
- Glomeris alluaudi*, Canaries, p. 439, BRÖLEMANN, Mem. Soc. zool. France xiii.
- Haplobainosoma*, n. g. of *Chordeumidæ*, def. for *lusitanum*, Coimbra, p. 392, figg. 47-49, VERHOEFF, Arch. Naturg. lxvi, n. sp.
- Heteroporatia plumigerum*, Vallombrosa, p. 396, figg. 55-59, VERHOEFF, t. c., n. sp.
- Icosidesmus*, g. def. and *hochstetteri*, descr., p. 254, ATTEMS, Denk. Ak. Wien lxviii.
- Iulus bovinus*, Tyrol, p. 310, pl. ii, figg. 13-15, ATTEMS, Arch. Naturg. lxvi; *I. schneideri*, Italy near San Remo, p. 521, LATZEL, Zool. Anz. xxiii; *I. teutonicus*, England, descr. and compared with *londinensis*, p. 206, Pocock, Ann. Nat. Hist. vi, n. spp.
- Katantodesmus*, n. g. of *Oniscodesminæ*, def. for *auriculatus*, Brazil, p. 385, pl. xv, figg. 343-345; *scapulatus*, Brazil, p. 386, pl. xv, figg. 346-349, ATTEMS, Denk. Ak. Wien lxviii, n. spp.
- Krüperia* n. g. of *Chordeumidæ*, def. for *nivale*, Oetagebirge, p. 394, figg. 50 & 51, VERHOEFF, Arch. Naturg. lxvi, n. sp.
- Leptodesmus rodriguezi*, Guatemala, p. 103, pl. vi, figg. 43-46, *d'orbignyi*, Colombia, p. 116, pl. vii, figg. 92-95, BRÖLEMANN, Mem. Soc. zool. France xiii, n. spp.
- L.*, sp. xlii, Guatemala, p. 104, BRÖLEMANN, t. c.
- Lysiopelatum*, sp., Paris, p. 81, BRÖLEMANN, Ann. Soc. ent. France lxix.
- Marptodesmus*, g. def. and *chanleri* descr., p. 276, ATTEMS, Denk. Ak. Wien lxviii.
- Mastigophorophyllum alpinum bohemicum*, Bohemia, p. 314, pl. i, figg. 3-7, ATTEMS, Arch. Naturg. lxvi, n. subsp.
- M. jickeli*, Borszig, p. 368, VERHOEFF, Arch. Naturg. lxvi, n. sp.
- Odontokrepis*, n. g. of *Oxydesminæ*, def., p. 309, for *nigrescens*, Cameroons, p. 310, ATTEMS, Denk. Ak. Wien lxviii, n. sp.
- Odontotropis clarazianus*, Brazil, p. 65, BRÖLEMANN, Bol. Mus. Para. iii.
- Orobainosoma flavescentis, setosum*, p. 179, pl. xiii, figg. 5, 11, 14, 19, ROTHENBÜHLER, Rev. Suisse Zool. viii, n. subsp.
- Orodesmus*, g. def. and key to spp., p. 303, *mastophorus*, p. 305, pl. xiii, figg. 303 & 304, other spp. descr., pp. 304-309, ATTEMS, Denk. Ak. Wien lxviii.
- Orotrechosoma*, n. g. of *Ascospermophora* defined for *cornuigerum*, S. E. Tirol, p. 383, figg. 28-30, VERHOEFF, Arch. Naturg. lxvi.
- Orthomorpha*, sp., CDLXXIV, descr., p. 92, BRÖLEMANN, Mem. Soc. zool. France xiii.



- Oxydesmus*, g. def. and key to spp., p. 289, *thomsoni*, p. 292, pl. xiii, fig. 302, *effulgens*, p. 294, pl. xiii, fig. 305, *granulosus*, p. 296, pl. xii, fig. 286, pl. xiii, figg. 297 & 298, *occidentalis*, p. 302, pl. xiii, figg. 301 & 301a, ATTEMS, Denk. Ak. Wien lxviii.
- O. denus*, Africa, p. 291, pl. xiii, fig. 300, *euryurus*, Cameroons, p. 291, pl. xiii, fig. 299, *levigatus*, E. Africa, p. 293, pl. xiii, fig. 309, *hemerus*, Malange, p. 294, pl. xiii, fig. 308, *gnorimus*, Liberia, p. 295, *kraepelini*, E. Africa, p. 295, pl. xiii, fig. 307, *diaphorus*, Togo, p. 297, pl. xiii, fig. 295, *unicolor*, Kribi, p. 298, pl. xiii, fig. 306, *castaneus*, Gaboon, p. 299, *episemus*, Tanganyika, p. 300, pl. xiii, fig. 296, ATTEMS, t. c., n. spp.
- Oxydactylon tirolense*, Vallombrosa, descr., p. 388, figg. 39-41, VERHOEFF, Arch. Naturg. lxvi.
- Pachyulus*, g. defined, p. 441, *alluaudi*, p. 442, pl. xi, figg. 8-10, *canariensis*, p. 444, pl. xi, figg. 11-17, *insularis*, p. 445, pl. xi, figg. 18-20, *parcestriatus*, p. 447, pl. xi, figg. 21-25, *myatax*, p. 449, pl. xi, figg. 26-29, BRÖLEMANN, Mem. Soc. zool. France xiii, n. spp.
- Pachyurus*, g. def. and key to spp., p. 280, *abstrusus*, p. 283, pl. xii, figg. 287-289, *fasciatus*, p. 285, pl. xii, figg. 290 & 291, *erythrokrepis*, p. 287, pl. xii, fig. 283, ATTEMS, Denk. Ak. Wien lxviii.
- P. kalonotus*, Peru, p. 282, *acuticollis*, Peru, p. 283, pl. xii, fig. 294, ATTEMS, t. c., n. spp.
- Platydesmus*, g. defined, p. 109, *lecontei*, descr., p. 110, pl. vii, figg. 69-77, BRÖLEMANN, Mem. Soc. zool. France xiii.
- P. guatemalæ*, Guatemala, descr., p. 112, pl. vii, figg. 78-82, BRÖLEMANN, t. c., n. sp.
- Platyrhacus*, g. def., key to spp. and descr. of spp. with illustrations of some, pp. 313-354; *P. complicatus*, p. 322, pl. xiv, figg. 327 & 328, *haplopus*, p. 323, pl. xiv, fig. 324, *margaritiferus*, p. 328, pl. xiv, fig. 341, *schetelyi*, p. 330, pl. xiv, fig. 318, *baramanus*, p. 331, pl. xiv, fig. 320, *druryi*, p. 332, pl. xiv, fig. 336, *plakodonotus*, p. 339, pl. xiv, fig. 315, *flavisternus*, p. 342, pl. xiv, fig. 339, *dorsalis*, p. 342, pl. xiv, fig. 340, *pfeifferæ*, p. 349, pl. xiv, fig. 317, *pictus*, p. 350, pl. xiv, figg. 327 & 328, *mirandus*, p. 351, pl. xiv, fig. 325, *scutatus*, p. 352, pl. xiv, fig. 329, ATTEMS, Denk. Ak. Wien lxviii; *P. clathratus*, p. 113, *dunali*, p. 113, pl. vii, figg. 83 & 84, *polygonatus*, p. 114, pl. vii, figg. 85-89, notes on Colombian type specimens, BRÖLEMANN, Mem. Soc. zool. France xiii.
- P. amblyodon*, Pelew IIs., p. 325, pl. xiv, fig. 335, *katantes*, N. Guinea, p. 326, pl. xiv, fig. 316, *tetanotropis*, Sangir, p. 331, pl. xiv, fig. 323, *moebiusi*, Satanga, p. 333, pl. xiv, fig. 334, *gongyloides*, E. Sumatra, p. 334, pl. xiv, fig. 326, *doryphorus*, p. 336, *helophorus*, p. 338, pl. xiv, fig. 322, *limonensis*, p. 344, pl. xiv, fig. 319, ATTEMS, Denk. Ak. Wien lxviii; *P. nitidus*, Guatemala, descr., p. 97, pl. vi, figg. 18-20, *acanthosternus*, Equatorial S. America, p. 120, pl. viii, figg. 103-105, *æquatorialis*, Colombia, p. 121, pl. viii, figg. 106-109, BRÖLEMANN, Mem. Soc. zool. France xiii : n. spp.
- Polydesmus prograssus*, Lombrive, p. 78, *niveus*, Lower Pyrenees, BRÖLEMANN, Ann. Soc. ent. France lxix; *P. panteli*, Spain, p. 131, figg. 1-4, BRÖLEMANN, Bull. Soc. ent. France 1900 : n. spp.
- P. subinteger steckii*, Switzerland, p. 172, pl. xiii, fig. 15, ROTHENBÜHLER, Rev. Suisse Zool. viii, n. subsp.
- P. planus*, p. 115, pl. vii, figg. 90 & 91, *pustulosus*, p. 115, notes on Colombian type specimens, BRÖLEMANN, Mem. Soc. zool. France xiii; *P. (Odontotropis) clarisianus*, ♂, descr. and fig., p. 181, BRÖLEMANN, Zool. Anz. xliii; *P. coriaceus*, Switzerland, p. 171, pl. xiii, fig. 6, ROTHENBÜHLER, Rev. Suisse Zool. viii.
- Poratia*, g. def., p. 359, *digitata*, descr., p. 360, pl. xv, fig. 350, ATTEMS, Denk. Ak. Wien lxviii.

- Prodicus attemsi*, Rome, p. 394, figg. 52-54, VERHOEFF, Arch. Naturg. lvi, n. sp.
- Rhinocricus chazaliei*, Martinique, p. 93, pl. vi, figg. 8-13, *obesus*, Guatemala, p. 107, pl. vii, figg. 59-65, *ocraceus*, Panama, p. 124, pl. viii, figg. 115-119, BRÖLEMANN, Mem. Soc. zool. France xiii, n. spp.
- R.*, sp. CDXXXII, notes, p. 94, sp. xciii, p. 108, pl. vii, figg. 66-68, *newporti*, ♂ from Colombia descr., p. 118, pls. vii & viii, figg. 96-102, BRÖLEMANN, t. c.
- Rothenhühleria*, n. g. of *Chordeumida*, def., for *Atractosoma minimum*, Roth., p. 389, var. *tirolense*, p. 389, figg. 42-44, VERHOEFF, Arch. Naturg. lvi.
- Schendyla attemsi*, Saida, p. 485, *walachica*, Roumania, p. 486, VERHOEFF, Zool. Anz. xxiii, n. spp.
- S.*, divided into 2 subgenera, p. 485, VERHOEFF, t. c.; *S. americana*, Colombia, n. var. descr., p. 90, pl. vi, figg. 1-7, BRÖLEMANN, Mem. Soc. zool. France xiii.
- Schizophyllum brandti*, descr., p. 311, pl. ii, figg. 9-12, ATTEMS, Arch. Naturg. lvi; *S. albolineatum*, France, descr., p. 219, BRÖLEMANN, Feuille Natural. xxx.
- Scytonotus*, g. def. and spp. diagnosed, p. 255, ATTEMS, Denk. Ak. Wien lxviii.
- Spirostreptus rodriguezi*, Guatemala, p. 104, pls. vi & vii, figg. 47-58, var. *coriaceus*, p. 106, BRÖLEMANN, Mem. Soc. zool. France xiii.
- S. baranquillinus*, Baranquilla in Colombia, p. 283, ATTEMS in Theresa, Prinzessin von Bayern, Zool. Anz. xxiii, n. sp.
- Synzenus*, n. g. defined for *orientalis*, Uruguay, p. 114, SILVESTRI, Zool. Anz. xxiii, n. sp.
- Trachelodesmus*, g. def., p. 251, *uncinatus*, Venezuela, p. 252, pl. xi, figg. 165, 166, ATTEMS, Denk. Ak. Wien lxviii, n. sp.
- Trigonulus goësi*, Brazil, p. 68, BRÖLEMANN, Bol. Mus. Para iii; *T. goësi*, notes on offensive secretion, p. 183, BRÖLEMANN, Zool. Anz. xxiii; *T. naresti*, posterior copulatory feet figured, p. 94, pl. vi, fig. 14, BRÖLEMANN, Mem. Soc. zool. France xiii.
- Trimeropheron*, n. g. def., p. 185, for *grypischium*, Switzerland, p. 186, pl. xiii, figg. 3, 9, 13, 20 & 21, ROTHENBÜHLER, Rev. Suisse Zool. viii, n. sp.
- Verhoeffia rothenbühleri*, S. Tirol, p. 397, figg. 60-62, VERHOEFF, Arch. Naturg. lvi, n. sp.

## PROTOTRACHEATA.

### I. TITLES.

1. \*BORRADAILE, L. A. The Outcome of a South Sea Voyage. Ann. Nat. Hist. (vii) iii, pp. 264-267.
2. BOUVIER, E. L. Nouveau Péripate des environs de Rio-de-Janeiro. Bull. Soc. ent. France 1900, pp. 66-68.
3. —. Observations sur le *Peripatopsis moseleyi*. T. c. pp. 119-121.
4. —. Observations nouvelles sur les *Peripatus*. T. c. pp. 394 & 395.
5. —. Observations sur le développement des Onychophores. C.R. Ac. Sci. cxxxi, pp. 652-654.

6. [BOUVIER, E. L.] Sur l'origine et les enchainements des Arthropodes de la classe des Onychophores (*Peripatus* et formes voisines). C.R. Ac. Sci. cxxx, pp. 735-738.
  7. —. Quelques observations sur les Onychophores (*Peripatus*) de la Collection du Musée Britannique. Quart. J. Micr. Soc. xliii, pp. 367-373.
  8. —. Nouvelles observations sur les *Peripatus* de la Collection du Musée Britannique. T. c. pp. 749-757.
  9. DENDY, A. A new *Peripatus* from New Zealand. Nature lxi, p. 444.
  10. —. Preliminary Note on a proposed new Genus of *Onychophora*. Zool. Anz. xxiii, pp. 509-511.
  11. GIARD, A. Cils vibratiles, et prolongements ciliformes chez les arthropodes. Bull. Soc. ent. France 1900, pp. 27 & 28.
  12. HORST, R. *Peripatus* in the Malay Peninsula. Nature lxi, p. 31.
  13. KEW, H. W. Notes on Spinning Animals. Sci. Gossip vii (New Series), pp. 36-38, 75-78, 130 & 131.  
[References to the slim glands, etc., of *Peripatus*.]
  14. MONTGOMERY, Jnr., T. H. The Spermatogenesis of *Peripatus* (*Peripatopsis*) *balfouri* up to the Formation of the Spermatid. Zool. Jahrb. Anat. xiv, pp. 277-368, pls. xix-xxv.
  15. PURCELL, W. F. On the Anatomy of *Ophisthopatus cinctipes* Purc., with notes on other, principally S. African, *Onychophora*. Ann. S. African Mus. ii, pp. 67-116, pls. x-xii.
  16. RUCKER, A. A description of the Male of *Peripatus eisenii* Wheeler. Biol. Bull. i, pp. 251-259.
- [Issued also as Contr. from the Zool. Lab. of the University of Texas, No. 5.]

## II. BIOLOGY.

- Anatomy of *Ophisthopatus cinctipes*, PURCELL (15).  
 Number of Legs and Food of *Peripatopsis moseleyi*, p. 120, BOUVIER (3).  
 Cilia in *Peripatus*, GIARD (11).  
 Colour variation in the *Prototracheata*, PURCELL (15), p. 96.  
 Relation of the external sexual opening to the posterior pair of legs in *Prototracheata*, PURCELL (15), p. 94, pl. x, figg. 1-5.  
 Structure of the ♂ genital organs, p. 280, and spermatogenesis in *Peripatopsis balfouri*, MONTGOMERY (14).  
 Reproductive organs and spermatophores of *Peripatus eiseni*, RUCKER (16).  
 Development of *Peripatus sedgwicki*, BOUVIER (5).  
 Comparison of embryo of *Peripatus* with Trochosphere of Annelids, BORRADAILE (1).  
 Ancestral form of the *Prototracheata*, PURCELL (15), p. 95.  
 Origin and primitive forms of *Peripatus*, BOUVIER (6).  
 Geographical distribution of *Peripatus*, p. 394, BOUVIER (4).  
 Diagnoses of African *Prototracheata*, PURCELL (15), p. 109.  
 Certain new species named but not diagnosed, BOUVIER (7).  
*Ooperipatus*, a new oviparous g. of *Peripatus*, DENDY (10).  
 Miscellaneous observations on spp. of *Peripatus* in the British Museum Collection, BOUVIER (7 & 8).

### III. DISTRIBUTION.

- Nicaragua: *P. nicaraguensis*, n. sp., BOUVIER (4).  
 Rio de Janeiro: *Peripatus ohausi*, n. sp., BOUVIER (2).  
 S. Africa: *Peripatus*, PURCELL (15).  
 Malay Peninsula: Occurrence of *Peripatus*, HORST (12).  
 New Zealand: *Ooperipatus viridimaculatus*, n. sp., BOUVIER (9).

### IV. SYSTEMATIC.

- Peripatus dominica*, var. *guanensis*, Porto Rico, p. 395, BOUVIER, Bull. Soc. ent. France 1900.  
*P. sedgwicki*, development and relations, BOUVIER, C.R. Ac. Sci. cxxxi.  
*P. ohausi*, Rio de Janeiro, p. 66, BOUVIER, Bull. Soc. ent. France 1900, n. sp.  
*P. nicaraguensis*, Nicaragua, p. 395, BOUVIER, t. c., n. sp.  
*P. brazilensis*, named only, p. 367, *lantesteri*, p. 368, BOUVIER, Quart. J. Micr. Soc. xliii, n. spp.  
*P. eiseni*, ♂ descr., p. 251, RUCKER, Biol. Bull. i.  
*P. moseleyi*, number of legs and food, p. 119, BOUVIER, Bull. Soc. ent. France 1900.  
*P. capensis*, localities in S. Africa, p. 99, *moseleyi*, variation and localities in S. Africa, p. 100, *balfouri*, *leonina*, p. 105, PURCELL, Ann. S. African Mus. ii.  
*P. balfouri*, spermatogenesis, MONTGOMERY, Zool. Jahrb. Syst. xiv.  
*Ooperipatus*, n. g. defined, p. 510, *oviparus*, *insignis*, *viridimaculatus*, p. 510, DENDY, Zool. Anz. xxiii.  
*O. viridimaculatus*, New Zealand, p. 444, DENDY, Nature lxi, n. sp.  
*Opisthopatus cinctipes*, anatomy, p. 68, pls. x-xii, localities in S. Africa and colour-varieties, p. 106, PURCELL, Ann. S. African Mus. ii.



# XIII. INSECTA.

By D. SHARP.

## CONTENTS.

	Page		Page
INTRODUCTION . . . . .	3	BIOLOGY— <i>continued</i> .	
I. TITLES . . . . .	5	3. Palaearctic region (a.	
II. BIOLOGY: SUBJECT-INDEX.		collective) . . . . .	99
Anatomy and Physiology . . . . .	82	b. Europe (collective) . . . . .	100
Habits, Instinct, Senses . . . . .	85	c. British Islands . . . . .	100
Development . . . . .	88	d. North Europe, Siberia . . . . .	104
General Subjects:—		e. Centr. & East. Europe . . . . .	105
Variation & Teratology . . . . .	89	f. France . . . . .	106
Hybrids . . . . .	91	g. South. Europe and Mediterranean . . . . .	107
Colour . . . . .	91	h. Caucasus & West & Central Asia . . . . .	109
Protection . . . . .	91	4. Africa . . . . .	109
Resemblance . . . . .	91	5. Madagascar, etc. . . . .	110
Phylogeny, Organogeny, Evolution, Heredity . . . . .	92	6. Tropical & East. Asia . . . . .	110
Galls . . . . .	92	7. Asiatic Archipelago . . . . .	111
Insects & Flowers & Plants . . . . .	92	8. Australia & Tasmania . . . . .	112
Collections, Preservation, Museums, Nomenclature . . . . .	93	9. North America . . . . .	112
Bibliography . . . . .	93	10. Central America . . . . .	113
Biography . . . . .	94	11. Antilles . . . . .	114
Obituary Notices . . . . .	94	12. South America . . . . .	114
Economic Entomology . . . . .	95	Palaeo-entomology . . . . .	115
Faunistic:—		III. SYSTEMATIC INDEX. . . . .	115
General . . . . .	98		
1. Arctic & Antarctic . . . . .	99		
2. Insular, incl. N. Zealand . . . . .	99		

### (a) COLEOPTERA (incl. STREPSIPTERA).

	Page		Page		Page
General . . . . .	115	Mycetophagidæ . . . . .	137	Cistelidæ . . . . .	162
Cicindelidæ . . . . .	116	Dermestidæ . . . . .	137	Melandryidæ . . . . .	163
Carabidæ . . . . .	117	Byrrhidæ . . . . .	138	Lagriidæ . . . . .	163
Halipidæ . . . . .	123	Parnidæ . . . . .	138	Anthicidæ, Pedilidæ . . . . .	163
Dytiscidæ . . . . .	123	Heteroceridæ . . . . .	138	Rhipiphoridæ and Mordellidæ . . . . .	164
Gyrinidæ . . . . .	123	Lucanidæ . . . . .	138	Cantharidæ and Cephaloidæ . . . . .	164
Hydrophilidæ . . . . .	124	Passalidæ . . . . .	139	Ædemeridæ . . . . .	165
Staphylinidæ . . . . .	124	Scarabæidæ . . . . .	139	Curculionidæ . . . . .	165
Pselaphidæ . . . . .	129	Buprestidæ . . . . .	145	Scolytidæ . . . . .	170
Paussidæ . . . . .	131	Throscidæ . . . . .	150	Brenthidæ . . . . .	171
Scydmænidæ . . . . .	131	Eucnemidæ . . . . .	150	Anthribidæ . . . . .	171
Silphidæ . . . . .	131	Elateridæ . . . . .	151	Proterhinidæ . . . . .	172
Trichopterygidæ . . . . .	132	Cebrionidæ . . . . .	154	Cerambycidæ . . . . .	172
Scaphidiidæ . . . . .	132	Rhipiceridæ . . . . .	154	Bruchidæ . . . . .	176
Histeridæ . . . . .	132	Dascillidæ . . . . .	154	Chrysomelidæ . . . . .	176
Nitidulidæ, Monotomidæ . . . . .	133	Malacodermidæ . . . . .	154	Erotylidæ . . . . .	184
Trogositidæ . . . . .	134	Cleridæ . . . . .	158	Endomychidæ . . . . .	185
Colydiidæ . . . . .	135	Ptinidæ . . . . .	159	Coccinellidæ . . . . .	185
Cucujidæ . . . . .	135	Bostrichidæ . . . . .	160	Corylophidæ . . . . .	187
Cryptophagidæ . . . . .	135	Cioidæ . . . . .	160		
Lathridiidæ . . . . .	136	Tenebrionidæ (incl. Rhysopaussidæ) . . . . .	160		

## (b) HYMENOPTERA.

	Page		Page		Page
General . . . .	188	Hymenoptera		Parasitica—	
Aculeata—		parasitica (or		Chalcididae . .	212
Apidae . . . .	188	Terebrantia) .	202	Proctotrypidae .	215
Vespidæ . . . .	192	Ichneumonidae .	202	Cynipidae . . .	216
Fossoria . . . .	193	Braconidae and		Sessiliventre—	
Formicidae . . .	196	Alysiidae . . .	207	Siricidae and	
Chrysididae . . .	201	Trigonalidae,		Oryssidae . . .	217
		Stephanidae,		Tenthredinidae .	217
		Evaniidae . . .	211		

## (c) LEPIDOPTERA.

	Page		Page		Page
General . . . .	220	Rhopalocera—		Heterocera—	
Rhopalocera—		Satyridæ . . . .	226	Noctuidæ, etc. .	251
General . . . .	220	Libytheidæ etc.	227	Geometridæ,	
Papilionidæ . . .	221	Lycenidæ . . . .	227	Epiplemidæ . .	263
Pieridæ . . . .	222	Hesperiidæ . . .	229	Pyrallidæ, Thy-	
Danaidæ (&		Heterocera—		rididæ . . . .	275
Neotropidæ) .	223	Castniidæ . . . .	233	Tortricidæ . . .	283
Acceidæ, Heli-		Sphingidæ . . . .	233	Tineidæ . . . .	287
coniidæ . . . .	223	Ægeriidæ . . . .	234	Pterophoridæ,	
Nymphalidæ . . .	223	Bombyces, etc. .	235	etc. . . . .	293
Morphidæ . . . .	226				

## (d) DIPTERA.

	Page		Page		Page
General . . . .	295	Tabanidæ . . . .	301	Syrphidæ . . . .	305
Cecidomyiidæ . . .	296	Leptidæ . . . .	302	Phoridæ . . . .	305
Mycetophilidæ . . .	297	Scenopinidæ . . .	302	Æstridæ . . . .	306
Chironomidæ . . . .	297	Asilidæ, Mydaidæ	302	Muscidæ calyp-	
Culicidæ, Dixidæ .	298	Bombyliidæ . . . .	303	tratae . . . .	306
Simuliidæ, Bibio-		Empidæ . . . .	303	Muscidæ acalyp-	
nidæ . . . . .	299	Dolichopodidæ .	303	tratae . . . .	308
Blepharoceridæ,		Lonchopteridæ .	305	Pupipara . . . .	311
Rhyphidæ . . . .	299	Platypezidæ and		Aphaniptera . .	312
Tipulidæ . . . .	299	Pipunculidæ .	305		
Stratiomyidæ . . .	300				

## (e) HEMIPTERA OR RHYNCHOTA.

	Page		Page		Page
General . . . .	313	Hem.-Heteroptera—		Hem.-Homoptera—	
Hemiptera Hetero-		Hydrometridæ .	321	Fulgoridæ . . .	326
ptera—		Reduviidæ etc. .	321	Membracidæ . .	328
Pentatomidæ . . .	313	Anthocoridæ . .	323	Cercopidæ . . .	328
Coreidæ . . . .	319	Ceratocombidæ,		Jassidæ . . . .	329
Lygæidæ . . . .	320	Cimicidæ,		Psyllidæ . . . .	331
Pyrrhocoridæ . . .	320	Saldidæ . . . .	323	Aphidæ . . . .	331
Phymatidæ . . . .	321	Capsidæ . . . .	324	Aleurodidæ . . .	332
Tingitidæ,		Hydrocorisæ . .	325	Coccidæ . . . .	332
Berytidæ		Hem.-Homoptera—		Anoplura . . . .	336
Aradidæ . . . .	321	Cicadidæ . . . .	325		

## (f) NEUROPTERA s. l. (incl. THYSANOPTERA).

	Page		Page		Page
Trichoptera . . . .	337	Termitidæ . . . .	339	Ephemeridæ . . .	340
Planipennia . . . .	338	Embiidæ . . . .	340	Odonata . . . .	341
Mallophaga . . . .	338	Perlidæ . . . .	340	Thysanoptera . .	343
Psocidæ . . . .	339				

## (g) APTERA.

Thysanura . . . .	344	Collembola . . . .	344
-------------------	-----	--------------------	-----

## (h) ORTHOPTERA.

	Page		Page		Page
General . . . .	346	Phasmidæ . . . .	348	O. Saltatoria—	
Forficulidæ . . . .	346	O. Saltatoria—		Locustidæ . . .	350
Blattidæ . . . .	347	Gryllidæ . . . .	349	Acridiidæ . . .	350
Mantidæ . . . .	348				



## INTRODUCTION.

THE literature of Insecta recorded this year is very extensive, the number of titles in our list being 1431 against 1241 last year, and 1346 in 1898—the previous maximum. In addition a large number of faunistic memoirs and shorter notes have been placed in the subject-indices, though not in the titles, so that somewhere between 1800 and 2000 works, papers and notes bearing on Insecta are recorded this year.

SJÖSTEDT (1221) has produced his monograph of African Termitidæ: it includes 82 species, a number nearly equal to that known from all the world at the date of HAGEN's monograph. The first Insect-part of das Tierreich, BORMANS & KRAUSS (153) has appeared, and HAMPSON (544) has completed the second volume of the British Museum Descriptive Catalogue of Moths. MARCHAL (852) has described a new aquatic Hymenopteron, SKORIKOW (1227) a *Japyx* an inch and a half long. SPEISER's revisions of some of the curious families of *Diptera Pupipara* are of considerable interest and Miss RICARDO's revision of *Pangonina* appears to be a valuable contribution to our knowledge of exotic *Diptera*—a branch of Entomology which is also redeemed from neglect by the work of STEIN (1276-1280) and others.

ASHMEAD has continued his work on *Hymenoptera*. His paper on *Ichneumonida* (38) will no doubt much facilitate the study of that enormous and extensive group. He considers that a million species of parasitic *Hymenoptera* are at present in existence and that about 10,000 of these have been described. His work on W. Indian *Hymenoptera* (40) is also of considerable importance; he catalogues about 1300 species; and as he also mentions in their proper positions the names of the families that are not represented, it is possible for one who is not a completely informed Hymenopterist to form an opinion as to the fauna.

PAGENSTECHER's account (974, 975) of the *Lepidoptera* of the Bismarck Archipelago, though certainly very far indeed from exhaustive, is one of the best we have for any group of tropical islands. PIEPERS & SNELLEN (1038) have published the first part of what promises to be an important work on the *Lepidoptera* of Java. HUTTON continues his papers on the entomology of New Zealand, dealing this time with the *Tipulida*, or Craneflies, of which he lists 44 species, more than half of them new (631).

The Harriman expedition to Alaska has resulted in an important increase in our knowledge of the entomology of that region. The series of papers hitherto published is given under KINCAID (710). Considerable progress has been made with the *Biologia Centrali-Americana*, GODMAN (511); and PERKINS (990) has done a good deal at the Hawaiian *Coleoptera*.

WASMAN's (1377) paper makes us acquainted with a considerable number of extraordinary forms of *Coleoptera* living with migratory ants in S. America and Africa.

One of the most important papers of the year is that by PETERSEN on the morphology and classification of *Lepidoptera*. He considers and generalises the various anatomical points with a view to basing a classification on the whole of them.

Prof. LAMEERE's volume (794) illustrates his views as to the classification of Insects, and gives keys for determining the species of several Orders. MEIJER's paper on the larva of *Lonchoptera* has an important bearing on the classification of *Diptera*.

BORDAS makes several contributions to anatomy; his work (144) on the reproductive organs of *Coleoptera* reviews 200 species, exhibiting great



variety, but capable of being classed in two or three great divisions. His paper on *Brachytrupes* makes us acquainted with a very remarkable arrangement of Malpighian tubes (149, 150).

ZANDER (1422) has continued his study of the sexual structures of *Hymenoptera* in a paper that will no doubt receive serious consideration from those who are establishing a terminology for these parts.

MIALL & HAMMOND's work on the structure and life-history of *Chironomus* gives a large amount of valuable information in a clear and concise form. In Embryology we may point to KNOWER's Termitid paper (738) and HEYMONS' remarks thereon.

From FOLSOM we have an important work on the morphology of the head and its appendages, giving special attention to the hypopharynx and treating of the relations between *Crustacea* and *Insecta*.

NEEDHAM (936) gives an extremely interesting sketch of the metamorphosis of a *Coleopteron*, showing that a more extensive study in this Order is likely to reveal facts of great importance as regards the growth of wings and legs and the phenomena of phagocytosis.

MERCER (896) has given the results of his investigation of the development of the wings of *Lepidoptera*, somewhat extending the discoveries of GONIN and others.

Great interest continues to be displayed in the physiology of metamorphosis, and numerous papers and discussions of the subject are recorded (see subject-index). BERLESE gives an important paper (103), and in (104) he impugns the destructive functions of the phagocytes.

PRATT (1054) has traced the origin of the imaginal discs in *Melophagus* to an early period of the embryonic development.

TORNIER (1325) has an interesting, if not very conclusive, study of malformations in *Coleoptera*. The determination of sex in parthenogenetic and other forms has been discussed at considerable length by CUGNOT (304).

GAHAN's review (478) of the stridulating organs of *Coleoptera* is of considerable interest.

FOREL (434) reproduces his former accounts of experiments as to Senses and Instinct, and adds a disquisition on the subject of Insect-psychology in general. WHEELER's study (1407, 8) of the habits and larvæ of *Ponerina* will give great pleasure to ethologists. Miss ADELE FIELD describes a simple and efficient form of artificial nest for the observation of Ants and other Insects.

The first part of KIEFFER's work on *Cecidomyiidae* (704) forms an important biological treatise, and gives much information as to galls. FABRE's new (385) volume does not, as might be expected, relate to *Hymenoptera*, but gives much information—some of it new—as to oviposition of *Curculionidae*, the making of cases by *Lepidoptera* and *Coleoptera*, the "assembling" of *Lepidoptera*, etc. BOUVIER (165, 6) and MARCHAL (853) have made valuable notes on the Instinct of fossorial *Hymenoptera*.

In the economic department REUTER's study (1103) of the causes bringing about "white-earedness" in corn and grasses appears to be important, and HUBER's bibliography of clinical entomology (618) is arranged according to species and will therefore prove useful to the entomologist, who often finds it very difficult to get information as to the collateral aspects of his subject.

## I. TITLES.\*

ABAFI-AIGNER. [See AIGNER.]

1. ABEILLE DE PERRIN, E. *Malachides* recueillis par M. Eugène Simon au Cap de Bonne-Espérance. Rev. Ent. franc. xix, pp. 163-177. [*Coleoptera*.]
2. —. Voyage de M. E. Simon à l'île de Ceylan. 7<sup>e</sup> mémoire. T. c. pp. 178-180. [*Coleoptera*.]
3. —. Description de deux *Staphylinides* nouveaux circuméditerranéens. Bull. Soc. ent. France 1900, pp. 203, 204. [*Coleoptera*.]
4. — & GROUVELLE, A. Descriptions de deux *Elmides* nouveaux de France. T. c. p. 137. [*Coleoptera*.]
5. ABSOLON, K. Einige Bemerkungen über mährische Höhlenfauna. [I. Aufsatz.] Zool. Anz. xxiii, pp. 1-6. [*Thysanura*.]
6. —. II. Aufsatz. T. c. pp. 57-60. [*Aptera*.]
7. —. III. Aufsatz. T. c. pp. 189-195. [*Aptera*.]
8. —. Vorläufige Mittheilung über einige neue *Collembolen* aus den Höhlen des mährischen Karstes. T. c. pp. 265-269.
9. —. Vorläufige Mittheilung über die *Aphoruriden* aus den Höhlen des mährischen Karstes. T. c. pp. 406-414. [*Aptera*.]
10. —. Über zwei neue *Collembolen* aus den Höhlen des österreichischen Occupationsgebietes. T. c. pp. 427-429.
11. ADLERZ, G. Biologiska meddelanden om rofsteklar. Ent. Tidskr. xxi, pp. 161-200. [*Hymenoptera*.]
12. AGASSIZ, G. Catalogue des Variétés et aberrations de ma collection. *Macrolépidoptères* de la zone paléarctique. Mt. Schweiz. ent. Ges. x, pp. 237-256.
13. AIGNER, ABAFI. *Acherontia atropos* életmódja. Rov. Lapok vii, pp. 51-55. [*Lepidoptera*.]  
— [See also PASZLAVSZKY (981).]
14. AITKEN, E. H. Butterflies as weather prophets. J. Bombay Soc. xiii, p. 540. [*Lepidoptera*.]  
Re migration of *Euplaea*.
15. ALFKEN, J. D. Die Gruppe der *Anthrena nigriceps* Kirby. Ent. Nachr. xxvi, pp. 3-7. [*Hymenoptera*.]
16. —. Zwei neue *Colletes*-Arten des paläarktischen Gebietes. T. c. pp. 74-76. [*Hymenoptera*.]
17. —. Über Leben und Entwicklung von *Eucera difficilis* (Duf.). T. c. pp. 157-159. [*Hymenoptera*.]
18. —. Drei neue *Anthrena*-Arten aus Japan. T. c. pp. 177-179. [*Hymenoptera*.]
19. —. *Bombus soroënsis* F., Form *proteus* Gerst und seine Farben-Varietäten. T. c. pp. 184-190. [*Hymenoptera*.]

---

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

20. [ALFKEN, J. D.] *Stilbula knuthii*, eine neue javanische *Eucharide* (*Chalcidoidea*). T. c. p. 191. [*Hymenoptera*.]
21. —. Die nordwestdeutschen *Proctopis*-Arten. T. c. pp. 233-244. [*Hymenoptera*.]
22. ALLUAUD, C. Contributions à la faune entomologique de la région Malgache. 8<sup>e</sup> note. Bull. Soc. ent. France 1900, pp. 18-22. [*Coleoptera*.]  
Includes two descriptions by FAIRMAIRE.
23. —. Deux *Coleoptères* nouveaux du Sud-est de Madagascar. Bull. Mus. Paris 1899, pp. 366, 367.
24. —. Description d'un *Coleoptère* nouveau du genre *Epactius* (*Omostron*) par M. Guillaume Grandidier dans le sud de Madagascar. T. c. p. 409.
25. —. Sur quelques *Coleoptères* de Madagascar de la famille des *Carabiques*, recueillis par M. Mocquerys et acquis par le Muséum. T. c. pp. 410-413.
26. —. Trois *Coleoptères* nouveaux pour la faune Malgache. Op. cit. 1900, pp. 17, 18.
27. ANDRÉ, E. Species des *Hyménoptères* d'Europe et d'Algérie. VIII. *Mutillides*, pp. 65-144. Plates iv-vi.  
This part forms fasc. 70 of the general work. Three other parts have been published during the year, cf. KIEFFER (700), MARSHALL (861).
28. —. Diagnoses d'Insectes recueillis par l'expédition antarctique belge. *Thynnida*. Ann. Soc. ent. Belgique xliv, p. 105. [*Hymenoptera*.]
29. ANDREWS, C. W. A monograph of Christmas island (Indian ocean). London 1900, 8vo, xiii & 337 pp., 32 plates.  
See BUTLER (29), HAMPSON (547), WALSHINGHAM (1366), KIRBY (724), WATERHOUSE (1386), GAHAN (479), ARROW (36).  
Also LEWIS describes 2 *Histerida*.
30. ANGLAS, J. Note préliminaire sur les métamorphoses internes de la guêpe et de l'abeille. La lyocytose. C.R. Soc. Biol. lii, pp. 94-97.
31. —. Sur la signification des termes "phagocytose" et "lyocytose." T. c. pp. 219-221.
32. ANNANDALE, N. Observations on the habits and natural surroundings of insects made during the "Skeat expedition" to the Malay peninsula, 1899-1900. P. Zool. Soc. London 1900, pp. 837-869.  
Condensed remarks of a similar kind appear in Rep. Brit. Ass. 1900, pp. 792, 793.
33. —. Notes on *Orthoptera* in the Siamese Malay States. Ent. Rec. xii, pp. 75-77, 95-97.
34. [ANON.] Notes on Insect pests from the Entomological Section, Indian Museum. Ind. Mus. Notes v, pp. 40-54.  
A continuation of the work of the late E. BARLOW, q.v.
35. ARROW, G. J. On pleurostict *Lamellicorus* from Greenland and St Vincent (West Indies). Tr. ent. Soc. London 1900, pp. 175-182. [*Coleoptera*.]
36. —. *Coleoptera*, *Clavicornia*, *Heteromera* [in] Monograph of Christmas island [cf. ANDREWS (29)], pp. 92-96 and 105-108.  
— [See also PEEL (983).]

37. ASHMEAD, W. H. On the genera of the Chalcid-flies belonging to the subfamily *Encyrtinae*. P. U. S. Mus. xxii, No. 1202, pp. 323-412. [*Hymenoptera*.]
38. —. Classification of the Ichneumon flies, or the superfamily *Ichneumonoidea*. Op. cit. (No. 1206), pp. 1-220. [*Hymenoptera*.]
39. —. Notes on some New Zealand and Australian parasitic *Hymenoptera*, with descriptions of new genera and new species. P. Linn. Soc. N. S. Wales xxv, pp. 327-360.
40. —. Report upon the Aculeate *Hymenoptera* of the islands of St Vincent and Grenada, with additions to the parasitic *Hymenoptera* and a list of the described *Hymenoptera* of the West Indies. Tr. ent. Soc. London 1900, pp. 207-367.
41. —. Classification of the fossorial, predaceous and parasitic wasps, or the superfamily *Vespoidea*. Canad. Ent. xxxii, pp. 145-155, 185-188, 295, 296. [*Hymenoptera*.]
42. —. Some *Hymenopterous* parasites from dragon-fly eggs. Ent. News Philad. xi, pp. 615-617.
43. —. Some new exotic parasitic *Hymenoptera*. T. c. pp. 623-630.
44. AURIVILLIUS, C. Verzeichniss der von Dr F. Meinert im Jahre 1891 in Venezuela gesammelten *Cerambyciden*. Ofv. Ak. Forh. lvii, pp. 409-421. [*Coleoptera*.]
45. —. Verzeichniss einer von den Herren Missionären E. Laman und W. Sjöholm bei Mukinbundu am unteren Congo zusammengebrachten Schmetterlingssammlung. T. c. pp. 1039-1058. [*Lepidoptera*.]
46. —. *Lepidoptera* och *Coleoptera* insamlade under Professor A. G. Nathorst's arktiska expeditioner 1898 och 1899, under den svenaka expeditionen till Beeren Eiland 1899 och under Konservator G. Kolt-hoff's expedition till Grönland 1900. T. c. pp. 1135-1144.
47. —. Svensk Insektafauna II. Ent. Tidskr. xxi, pp. 233-254. [*Orthoptera*.]
48. AUSTEN, E. E. How to collect *Diptera* (two-winged flies) with notes on the habits of the perfect Insects and larvæ. London, British Museum Natural History 1900, 16 pp.  
— [See also PEEL (983).]
49. AZAM, J. Description d'un *Orthoptère* nouveau de France. Bull. Soc. ent. France 1900, p. 82.
50. BACHMETJEV, P. Die Abhängigkeit des kritischen Punktes bei Insekten von deren Abkühlungsgeschwindigkeit. Zeitschr. wiss. Zool. lxvii, pp. 529-550.
51. —. Der kritische Punkt der Insekten und das Entstehen von Schmetterlings-Aberrationen. Illustr. Zeitschr. Ent. v, pp. 36 etc.
52. —. Die Variation des kritischen Punktes bei verschiedenen Exemplaren einer und derselben Insekten-Art. Soc. ent. xv, pp. 1, 2.
53. —. Das vitale Temperaturminimum bei Insekten von der Zeit. T. c. pp. 41-43, 49-52.
54. —. Lähmung bei *Lepidopteren* infolge erhöhter Temperatur ihres Körpers. T. c. pp. 89-91, 97-100, 105-110.

55. BAKER, C. F. On some American species of *Macropsis* (*Jassidæ*). *Psyche* ix, pp. 55-59. [*Hemiptera-Homoptera*.]
56. —. Notes on *Clastoptera* (*Cercopidæ*). *Ent. News Philad.* xi, pp. 463, 464. [*Hemiptera-Homoptera*.]
57. —. Four new species of *Platymetopius*. *Canad. Ent.* xxxii, pp. 49, 50. [*Hemiptera-Homoptera*.]
58. BALL, E. D. Some new *Jassidæ* from the Southwest. *Canad. Ent.* xxxii, pp. 200-205. [*Hemiptera Homoptera*.]
59. —. Additions to the Western *Jassid* fauna. *T. c.* pp. 337-347. [*Hemiptera-Homoptera*.]
60. —. Notes on the species of *Macropsis* and *Agallia* of North America. *Psyche* ix, pp. 126-130. [*Hemiptera-Homoptera*.]
61. BANCROFT, T. L. On the metamorphosis of the young form of *Filaria bancrofti* Cobb. in the body of *Culex ciliaris* L. the "House mosquito" of Australia. *J. R. Soc. N. S. Wales* xxxiii, pp. 48-62. [*Diptera*.]
62. BANKS, N. A list of works on N. American entomology. *Bull. U. S. Dep. Agric. Ent.* xxiv, 95 pp.  
Arranged systematically and therefore very useful.
63. —. New genera and species of Nearctic *Neuropteroid* insects. *Tr. Amer. ent. Soc.* xxvi, pp. 239-259.
64. —. Papers from the Harriman Alaska expedition. *Entomological results* (4). *Neuropteroid* Insects. *P. Washington Ac.* ii, pp. 465-476, pls. xxvii, xxviii.
65. —. A new genus of *Atropidæ*. *Ent. News Philad.* xi, pp. 431, 432. [*Neuroptera*.]
66. —. Two new species of *Troctes*. *T. c.* pp. 559, 560. [*Neuroptera*.]
67. —. A new species of *Myrmeleon* from Texas. *T. c.* p. 596. [*Neuroptera*.]  
— [See also COCKERELL (264).]
68. \*BARGMANN, A. Altes vom Fichtenborkenkäfer und neues von den Tannenborkenkäfern, mit besonderer Berücksichtigung des 1898 -er Tannenborkenkäferfrasses in Oberelsass. *Allg. Forst- u. Jagdztg.* 1899. [*Coleoptera*.]  
Summary Illustr. *Zeitschr. Ent.* v, pp. 94, 95.
69. BARLOW, E. [the late]. Notes on insect-pests from the entomological section, Indian Museum. *Ind. Mus. Notes* v, pp. 14-34, pl. iii.  
For a similar communication in Pt. II, see ANON. (34).
70. BARNES, W. Notes on N. American diurnals with some additions and corrections to Dr Skinner's catalogue. *Ent. News Philad.* xi, pp. 328-332. [*Lepidoptera*.]  
Chiefly new stations.
71. —. New species and varieties of North American *Lepidoptera*. *Canad. Ent.* xxxii, pp. 42-48.
72. BARRETT, G. The *Lepidoptera* of the British Islands. Parts lxxi-lxxvii.  
These parts commence Vol. VII, *Geometridæ*.
73. BARRETT, O. W. Some notes on the "Cambridge Natural History, Vol. vi." *Canad. Ent.* xxxii, pp. 234-236. [*Lepidoptera*.]

74. BARTLETT, E. Butterflies of Borneo with notes. The Ethnological, Zoological and Botanical note book of Sarawak, being notes reprinted from the "Sarawak Gazette" 1896. Kuching Sarawak. Butterflies, 8 parts, 519 species.
75. BASILI, A. Fecondazione ed immunità per il *Proteosoma* nel *Culex pipiens*. Atti Acc. Lincei Rend. ix (2), pp. 362-364.
76. BASSETT, H. F. New species of N. American *Cynipidæ*. Tr. Amer. ent. Soc. xvi, pp. 310-336. [*Hymenoptera*.]
77. BASTELBERGER, —. Über *Zonosoma lenigiaria* Fuchs und ihre Beziehung zu *albiocellaria* Hb. Jahrb. Nassau. Ver. liii, pp. 201-215. [*Lepidoptera*.]
78. —. Über das Entölen. Illustr. Zeitschr. Ent. v, pp. 52-55.
79. —. Ueber die Genitalanhänge der Männchen unserer europäischen *Zonosoma*- (*Ephyra*-) Formen. Deutsche ent. Zeitschr. Lep. xiii, pp. 73-94, pls. 2, 3. [*Lepidoptera*.]
80. BATAILLON, E. Le problème des métamorphoses. C.R. Soc. Biol. lii, pp. 244-247.
81. —. La Théorie des métamorphoses de M. Ch. Pérez. Bull. Soc. ent. France 1900, pp. 58-62.
82. BECKER, T. Dipterologische Studien v. *Pipunculidæ*. Berlin. ent. Zeitschr. xlv, pp. 215-252.
83. —. Die *Leptiden*-Formen im Gebiete der Europäisch-Asiatischen und Mittelmeer-Fauna. Ent. Nachr. xvi, pp. 97-116 & 176. [*Diptera*.]
84. BEDEL, L. Diagnoses de deux nouveaux *Dromius* de Barbarie. Bull. Soc. ent. France 1900, pp. 12, 13. [*Coleoptera*.]
85. —. Description d'un *Platyderus* nouveau de la Tunisie méridionale. T. c. p. 170. [*Coleoptera*.]
86. —. Diagnose d'un *Harpalide* nouveau, de Tunisie. T. c. p. 247. [*Coleoptera*.]
87. —. Notes sur les *Paussus* du nord de l'Afrique et sur les espèces du groupe de *P. cornutus* Chevr. T. c. pp. 278, 279. [*Coleoptera*.]
88. —. Description d'une espèce nouvelle de *Nanophyes* parasite du *Sedum telephium* L. T. c. p. 304. [*Coleoptera*.]
89. —. Descriptions de deux *Coléoptères* nouveaux, du nord de l'Afrique. T. c. pp. 335, 336.
90. BELLEVOYE, A. Observations sur les *Hoemonia*. Bull. Soc. Reims iii, 1894, pp. 89-111, plate. [*Coleoptera*.]
91. —. Étude sur les mœurs des *Xyleborus dispar* Fabr. et *saxseni* Ratz. Op. cit. vii, pp. 162-177. [*Coleoptera*.]
92. — & LAURENT, J. Les plantations de pins dans la Marne et les parasites qui les attaquent. Op. cit. v, pp. 70-126 ; vi, pp. 59-111.
- 92a. BELON, M. J. A propos des travaux récents sur les *Lathridiidae*. Notes supplémentaires à l'essai de classification. Rev. Ent. franc. xix, pp. 75-122. [*Coleoptera*.]
93. —. Descriptive catalogue of the *Coleoptera* of South Africa. Family *Lathridiidae*. Tr. S. African Phil. Soc. xi, pp. 35-52.

94. BENGTSSON, S. Ueber sogen. Herzkörper bei Insectenlarven zugleich ein Beitrag zur Kenntniss der Blutgewebe. Bih. Svenska Ak. xxv, No. 3, 23 pp., pls. i, ii.  
Summary, J. R. Micr. Soc. 1901, p. 152.
95. —. C. G. Thomson. Minnesteckning. With portrait. Ent. Tidskr. xxi, pp. 1-16.  
Includes a bibliographic list.
96. BENHAM, W. B. Note on *Cordyceps sinclairii* Berkely. Tr. N. Zealand Institute xxxii, pp. 4-8, pl. i. [*Hemiptera-Homoptera*.]  
On *Cicada sinclairii*.
97. BERG, C. Tres *Reduviidae novae argentinæ*. Comun. Mus. Buenos Aires i, pp. 187-190. [*Hemiptera-Heteroptera*.]
98. —. Termitariophilie. T. c. pp. 212-214. [*Coleoptera*.]
99. —. Apuntes sobre dos especies del género *Odynerus* de la Tierra del Fuego. T. c. pp. 237-240. [*Hymenoptera*.]
100. —. Notice sur les espèces du genre *Alurnus* F. appartenant à la faune Argentine. T. c. pp. 252-257. [*Coleoptera*.]
101. —. *Pleminia argentina*, un nuevo pseudofilido. T. c. p. 264. [*Orthoptera*.]
102. —. Rectificaciones y Anotaciones á la "Sinopsis de los *Hemipteros* de Chile" de Edwyn C. Reed. An. Mus. Buenos Aires vii, pp. 81-91.
103. BERLESE, A. Osservazioni su fenomeni che avvengono durante la ninfosi degli insetti metabolici. Parte 1<sup>a</sup>. Tessuto adiposo. (Trofociti.) Rivist. Patol. Veg. viii, pp. 1-155, pls. i-vi.  
Summary by HEYMONS in Zool. Centrbl. viii, pp. 239-241. Summary also in J. R. Micr. Soc. viii, p. 192.
104. —. Considerazioni sulla Fagocitosi negli insetti metabolici. Zool. Anz. xxiii, pp. 441-449.  
Summary, J. R. Micr. Soc. 1901, p. 31.
105. —. Intorno alle modificazioni di alcuni tessuti durante la ninfosi della *Calliphora erythrocephala*. Bull. Soc. ent. Ital. xxxii, pp. 253-288.  
Refers to the paper of SUPINO (1294), who replies (1295).
106. —. Osservazioni circa proposte per allontanare i parassiti delle piante merce iniezioni interorganiche. Rivist. Patol. Veg. viii, pp. 166-181.
107. BERNHAUER, M. Siebente Folge neuer *Staphyliniden* aus Europa, nebst Bemerkungen. Verh. Ges. Wien I, pp. 38-50. [*Coleoptera*.]
108. —. Achte Folge.... T. c. pp. 197-204. [*Coleoptera*.]
109. —. Neunte Folge.... T. c. pp. 532-541. [*Coleoptera*.]
110. —. Die *Staphyliniden*-Gattung *Leptusa* Kraatz, nebst einer analytischen Bestimmungstabelle der paläarktischen Arten. T. c. pp. 399-432. [*Coleoptera*.]
111. —. Neue *Staphyliniden* aus dem Kaukasus und den angrenzenden Ländern. Wien. ent. Zeit. xix, pp. 46-55. [*Coleoptera*.]  
— [See also BODEMEYER (131).]
112. BERTHOUMIEU, V. 5<sup>e</sup> supplement aux *Ichneumonides* d'Europe. Bull. Soc. ent. France 1900, pp. 249-252. [*Hymenoptera*.]

113. [BERTHOUMIEU, V.] "*Ichneumon specularius*," nov. sp. Echange xvi, p. 56. [*Hymenoptera*.]
114. BETHE, A. Noch einmal über die psychischen Qualitäten der Ameisen. Arch. ges. Physiol. lxxix, pp. 39-52. [*Hymenoptera*.]
115. BEUTENMÜLLER, W. Two new *Sesiidae*. J. N. York Ent. Soc. viii, p. 254. [*Lepidoptera*.]
116. —. A new *Sesia* from Alaska. Canad. Ent. xxxii, pp. 208 and 377. [*Lepidoptera*.]
117. —. Synopsis of food-habits of the larvæ of the *Sesiidae*. T. c. pp. 301-303. [*Lepidoptera*.]  
— [See also DYAR (360).]
118. BEZZI, M. Contribuzioni alla fauna *ditterologica* italiana. II. *Ditteri* delle Marche e degli Abruzzi. Seconda continuazione. Bull. Soc. ent. Ital. xxxii, pp. 77-102.
119. —. De nova *Dipterorum* specie faunae hungaricae pertinenta. Termes. Fuzetek xxiii, pp. 251, 252.
120. BILLINGHURST, F. L. Notes on Australian dragon-flies. Victorian Natural. xvii, pp. 5-9. [*Odonata*.]
121. BINGHAM, C. T. Account of a remarkable swarming for breeding purposes of *Sphex umbrosus* Christ, with notes on the nests of two other species of *Sphex* and of certain of the *Pompilidae*. J. Bombay Soc. xiii, pp. 177-180. [*Hymenoptera*.]
122. BIOLLEY, P. *Orthopteros* de Costa Rica. Inf. Mus. Nac. Costa Rica 1899-1900, pp. 41-57.  
Account of the work that has been done recently.
123. BLACKBURN, T. Further notes on Australian *Coleoptera*, with descriptions of new genera and species. xxxvi. Tr. R. Soc. S. Austral. xxiv, pp. 35-68.
124. —. Further notes.... xxvii. T. c. pp. 113-169. [*Coleoptera*.]
125. —. On some new genera and species of Australian *Coleoptera*. P. Soc. Victoria xii, pp. 206-233.
126. BLATCHLEY, W. S. On the species of *Nemobius* known to occur in Indiana. Psyche ix, pp. 51-54. [*Orthoptera*.]
127. \* —. Gleanings from Nature. Indianapolis, 1899?, 348 pp., Illustrations and plates.  
Cf. Ent. Rec. xii, p. 112.
128. BLEUSE, L. Anomalies observées chez deux *Lépidoptères*. Bull. Soc. ent. France 1900, p. 52.  
Cf. GIARD, t. c. p. 53.
129. BLOCHMANN, —. Die Entstehung der Drohnen bei der Honigbiene. Jahresh. Ver. Württemb. lvi, pp. lvii-lix. [*Hymenoptera*.]
130. BOAS, J. E. V. Ueber einen Fall von Brutpflege bei einem Bockkäfer (*Superda populnea*). Zool. Jahrb. Syst. xiii, pp. 249-258, pl. xxii. [*Coleoptera*.]  
Summary, Zool. Centrbl. vii, p. 511.



131. BODEMEYER, E. v. Quer durch Klein-Asien in den Bulghar-Dagh. Eine naturwissenschaftliche Studien-Reise. Emmendingen 1900, 8vo, v and 169 pp. [*Coleoptera*.]  
About 60 new species are described by GANGLBAUER, BERNHAUER, BRENSKE, BOURGEOIS, REITTER, WEISE. Some of the descriptions are published also elsewhere. Cf. WEISE (1396).
132. BOGUE, E. E. A new species of *Kermes*. Canad. Ent. xxxii, p. 205. [*Coccidae*.]
133. BOLIVAR, I. Les *Orthoptères* de St. Joseph's College à Trichinopoly (Sud de l'Inde). 2<sup>me</sup> partie. Ann. Soc. ent. France lxviii, pp. 761-812, pls. xi, xii.
134. —. Catálogo sinóptico de los *Ortópteros* de la fauna ibérica (continuado). Ann. Sci. nat. Porto vi, pp. 1-28.
135. \*BOLLE, J. Über die Thätigkeit der k. k. landwirtschaftlich-chemischen Versuchsstation zu Görz im Jahre 1899. Zeitschr. Landwirth. Versuchswesen Oesterreich 1900, Heft 3. [*Diptera*.]  
Cf. Wien. ent. Zeit. xix, p. 193.
136. \* —. Der Seidenspinner des Maulbeerbaumes, sein Aufzucht, seine Krankheiten und die Mittel zu ihrer Bekämpfung. Votr. naturwiss. Kenntn. Wien xxxix, 1899.  
Cf. Wien. ent. Zeit. xix, p. 185.
137. \* —. Der Seidenbau Oesterreichs 1848 bis 1898. Festschr. Gesch. österr. Land- und Forstwirthschaft. Wien 1899.  
Cf. Wien. ent. Zeit. xix, p. 185.
138. BORDAGE, E. Sur les différentes colorations des chrysalides de *Papilio demoleus* et de *Danaïs chrysippus*. Bull. Soc. ent. France 1900, pp. 234-238. [*Lepidoptera*.]
139. —. On the absence of regeneration in the posterior limbs of the *Orthoptera saltatoria* and its probable causes. Ann. Nat. Hist. v, pp. 234-239.  
Translation by W. M. WEBB of paper recorded last year, Zool. Rec. xxxvi, Ins. Titles (126).
140. —. Regeneration of the tarsus and of the two anterior pairs of limbs in the *Orthoptera saltatoria*. T. c. pp. 237-239.  
Translation by W. M. WEBB of article recorded last year, Zool. Rec. xxxvi, Ins. Titles (127).
141. —. On the spiral growth of appendages in course of regeneration in *Arthropoda*. T. c. pp. 314-316. [*Orthoptera*.]  
Translation by W. M. WEBB of article recorded last year, Zool. Rec. xxxvi, Ins. Titles (128).
142. —. On the special protection of appendages in process of regeneration after artificial mutilation among insects. T. c. pp. 501-503.  
Translation by W. M. WEBB of article recorded last year, Zool. Rec. xxxvi, Ins. Titles (129).
143. BORDAS, L. Étude anatomique des organes générateurs mâles des *Coléoptères* à testicules composés et fasciculés. C.R. Ac. Sci. cxxx, pp. 738-740.
144. —. Recherches sur les organes reproducteurs mâles des *Coléoptères* (Anatomie comparée, histologie, matière fécondante). Ann. Sci. nat. xi, pp. 283-448, pls. xvii-xxvii.  
Summary by ESCHERICH, Zool. Centrbl. viii, pp. 66-69.

145. [BORDAS, L.] Étude comparée des organes reproducteurs mâles des *Coleoptères*. C.R. Ass. Franc. xxviii (2), pp. 537-540.
146. —. Étude des glandes génératrices mâles des *Chrysomélides*. Bull. Mus. Paris 1899, pp. 282-285. [*Coleoptera*.]
147. —. Contribution à l'étude du système nerveux sympathique sus-intestinal ou somatogastrique des *Orthoptères*. Bull. Sci. France Belgique xxxiii, pp. 453-482, pls. ix, x.
148. —. Sur le revêtement épithélial cilié de l'intestin moyen et des caecums intestinaux chez les Insectes. Bull. Soc. ent. France 1900, pp. 25-27. [*Orthoptera*, *Hymenoptera*.]
149. —. Étude sur l'appareil digestif du *Brachytrupes achatinus* Stoll. C.R. Ac. Sci. cxxxi, pp. 66-69. [*Orthoptera*.]  
Summary of paper in Ann. Inst. col. Marseille.
150. —. Contribution à l'histoire naturelle de quelques *Gryllida* et notamment de *Brachytrupes achatinus* Stoll qui, du Tonkin, cause des ravages dans les plantations de café. Ann. Inst. col. Marseille vii, fasc. 2, 70 pp., 36 cuts, 1 pl. [*Orthoptera*.]
151. BORELLI, A. Descrizione di una nuova *Forficula* del Congo. Boll. Mus. Torino xv, No. 381, 3 pp. [*Orthoptera*.]
152. BORMANS, A. DE. Quelques *Dermaptères* du Musée civique de Gènes. Ann. Mus. Genova xl, pp. 441-467. [*Orthoptera*.]
153. — & KRAUSS, H. Das Tierreich. 11 Lieferung. *Forficulida* und *Hemimerida*. Berlin, 1900, 8vo, xvi & 142 pp. [*Orthoptera*.]  
*Forficulida* by DE BORMANS.
154. BÖRNER, C. Vorläufige Mittheilung zur Systematik der *Sminthurida* Tullb., insbesondere des Genus *Sminthurus* Latr. Zool. Anz. xxiii, pp. 609-618. [*Collembola*.]
155. BOURGEOIS, J. *Coleoptères*, *Dascillida*. Diagnoses d'insectes recueillis par l'expédition antarctique belge. Ann. Soc. ent. Belgique xliv, p. 111.
156. —. Étude sur les *Lycides* du Musée royal d'histoire naturelle de Belgique. (Espèces du Congo et pays voisins.) T. c. pp. 139-146. [*Coleoptera*.]
157. —. Diagnoses de *Lycides* nouveaux ou peu connus. 7<sup>e</sup> partie. Ann. Soc. ent. France lxxviii, pp. 658-665. [*Coleoptera*.]
158. —. *Lycides* nouveaux ou peu connus du Musée civique de Gènes. Deuxième mémoire. Ann. Mus. Genova xl, pp. 420-432. [*Coleoptera*.]
159. —. Notes sur quelques *Malthinus* paléarctiques (suite) et description d'une espèce nouvelle. Bull. Soc. ent. France 1900, pp. 91-96, 301-303. [*Coleoptera*.]
160. —. Description de deux *Malacodermes* nouveaux de l'Amérique méridionale. T. c. p. 118. [*Coleoptera*.]
161. —. Sur un mode particulier de progression souterraine chez quelques larves d'Insectes. T. c. p. 261. [*Coleoptera*.]
162. —. Notes sur quelques *Podistrina* et description d'une espèce nouvelle d'Algérie. T. c. pp. 283-285. [*Coleoptera*.]
163. —. Description d'un *Lampyride* européen nouveau. T. c. p. 337. [*Coleoptera*.]

164. [BOURGEOIS, J.] Description d'une nouvelle espèce française du genre *Podiatria* et notes d'habitat. T. c. p. 378. [*Coleoptera*.]  
— [See also BODEMEYER (131).]
165. BOUVIER, E. L. Le retour au nid chez les *Hyménoptères* prédateurs du genre *Bembex*. C.R. Soc. Biol. lii, pp. 874-876.
166. —. Les variations des habitudes chez les *Philanthes*. T. c. pp. 1129-1131. [*Hymenoptera*.]
167. BRANCSIK, C. Aliquot *Coleoptera* nova Russiae asiaticae. Jahresh. Ver. Trencsen. xxi, pp. 97-105.
168. —. Traité sur la faune des *Orthoptères* de l'Afrique centrale. T. c. pp. 180-185.  
Merely a list of names.
169. —. *Coleoptera-torzok*. Rov. Lapok vii, pp. 55-59.
170. BRANDES, G. Ueber Duftapparate bei Käfern. Zeitschr. Naturw. lxxii, pp. 209-216. [*Coleoptera*.]  
Summary, Zool. Centrbl. vii, p. 207.
171. BRAUNS, H. Ein neuer termitophiler *Aphodier* aus dem Oranje-Freistaat. Mit Bemerkungen und einer Tafel von E. WASMANN, S.J. Ann. Hofmus. Wien xv, pp. 164-168, pl. ix. [*Coleoptera*.]
172. BREDDIN, G. *Hemiptera* gesammelt von Professor Kiikenthal im Malayischen Archipel. Abh. Senckenb. Ges. xxv, pp. 139-202, pl. ix.
173. —. *Hemiptera* Sumatrana collecta a dom. Heurico Dohrn, enumerata et descripta. Pars I. Ent. Zeit. Stettin lxi, pp. 275-336.
174. —. Nova studia *hemipterologica*. Deutsche ent. Zeitschr. 1900, pp. 161-185.
175. —. *Hemiptera* nonnulla regionis Australicae. Ent. Nachr. xxvi, pp. 17-46.
176. —. Materiae ad Cognitionem subfamiliae *Pachycephalini* (*Lybantini* olim), ex *Hemipteris-Heteropteris*, Fam. *Coreidae*. Rev. Ent. franc. xix, pp. 194-217.
177. BRENSKE, E. Die *Serica*-Arten der Erde. Monographisch bearbeitet. (Fortsetzung). Berlin. ent. Zeitschr. xlv, pp. 39-96. [*Coleoptera*.]  
This is Part III and deals with species from Africa and Madagascar.
178. —. Die *Melolonthiden* Ceylon's unter besonderer Berücksichtigung der von Herrn Dr. Horn gesammelten Arten. Ent. Zeit. Stettin lxi, pp. 341-363. [*Coleoptera*.]
179. —. Contribution à l'étude de la faune de Sumatra. VIII. *Melolonthiden* gesammelt von J. L. Weyers. Mem. Soc. ent. Belgique vii, pp. 141-155. [*Coleoptera*.]
180. —. Sur quelques nouvelles espèces de *Melolonthides* (Genre *Serica*) de Cambodge et du Siam appartenant au Muséum de Paris. Bull. Mus. Paris 1899, pp. 414-416. [*Coleoptera*.]
181. —. *Coleoptères Scarabæidae*. Diagnoses d'Insectes recueillis par l'expédition antarctique belge. Ann. Soc. ent. Belgique xlv, pp. 109, 110.
182. —. Diagnoses *Melolonthidarum* novarum ex Bangalore. Ind. Mus. Notes v, p. 38, pl. iv. [*Coleoptera*.]  
Relates to *Adoretus*; *Rutelides* not *Melolonthides*.  
— [See also BODEMEYER (131) and HELLER (574).]

183. BRÈTHES, F. J. [F. JUDULIEN]. *Parisanopus*, un nouveau genre de Staphylins (*Quediaria*). Comun. Mus. Buenos Aires i, pp. 215-217. [*Coleoptera*.]
184. BRICK, C. Ergänzungen zu meiner Abhandlung über "das amerikanische Obst und seine Parasiten." Mt. Mus. Hamburg xvii, 1899, 3 Beil. pp. 217-235. [*Coccidæ*.]
185. BRUES, C. T. Peculiar tracheal dilatations in *Bittacomorpha clavipes* Fabr. Biol. Bull. i, p. 160. [*Diptera*.]  
 —. [See also MELANDER & BRUES (890).]  
 BRUNER, L. [See GODMAN (511).]
186. BRUNNER v. WATTENWYL, C. *Orthoptères*. Diagnoses d'insectes recueillis par l'expédition Antarctique belge. Ann. Soc. ent. Belgique xlv, p. 112, 113.
187. —. *Tristira*, genus novum *Tryxalidarum*, vicinum *Stauronoto*, ex Fuegia. Comun. Mus. Buenos Aires i, pp. 235, 236. [*Orthoptera*.]
188. —. Note on the coloration of insects. Ent. Rec. xii, pp. 2-4.
189. \* —. Die Färbung der Insekten. Vienna, 1899.  
 A reissue in altered form of the larger work published in 1897. Cf. Ent. Rec. xii, p. 351.  
 —. [See also PEEL (983).]
190. BRUYANT, C. & EUSÉBIO, A. Sur la faune halophile de l'Auvergne. C.R. Ac. Sci. cxxx, pp. 178-181. [*Coleoptera*.]
191. BUCKLER, W. [the late]. The larvæ of the British butterflies and moths. Vol. ix. (The *Deltoides*, *Pyrales*, *Crambites*, *Tortrices*, *Tineæ* and *Pterophori*, concluding the work.) Edited by G. T. PORRITT. London, 1901, xviii and 419 pp., pls. cxlviii-clxiv. [*Lepidoptera*.]
192. BUCKTON, G. B. Description of a new species of *Psylla* destructive to Forest trees. Ind. Mus. Notes v, p. 35. [*Hemiptera-Homoptera*.]
193. —. Description of a new species of *Aleurodes* destructive to betel. T. c. p. 36. [*Aleurodidæ*.]
194. \* BUFFA, P. Sopra una nuova Cocciniglia (*Aclerda de Berlesii*). Boll. Ent. Agrar. 1898, Heft 1, pp. 5-8. [*Coccidæ*.]  
 Cf. Illustr. Zeitschr. Ent. v, p. 92, for summary with description.
195. BUREAU, L. Le Lycte canaliculé (*Lyctus canaliculatus* Fabr.) et les ravages qu'il fait dans les parquets et autres bois ouvrés (mœurs, expertises, jugements). Bull. Soc. Ouest France x, pp. 169-201. [*Coleoptera*.]
196. BURR, M. Essai sur les *Eumastacides* (conclusion). An. Soc. Espan. xxviii, pp. 345-350, pl. x.
197. —. Notes on the *Forficularia*. v. Descriptions of new species and a new genus. Ann. Nat. Hist. vi, pp. 79-88, pl. iv. [*Orthoptera*.]
198. —. Notes on the *Forficularia*. vi. On a collection of *Forficularia* from Sarawak. T. c. pp. 88-101, pl. iv. [*Orthoptera*.]
199. —. *Forficules* exotiques du Musée Royal d'histoire Naturelle de Bruxelles. Ann. Soc. ent. Belgique xlv, pp. 47-54. [*Orthoptera*.]
200. —. *Orthoptera*: with special reference to British species. P. S. London ent. Soc. 1899, pp. 31-43.

201. [BURR, M.] The distribution of *Orthoptera* found in Great Britain. Ent. Rec. xii, pp. 209-212.
202. —. On the geographical distribution of European *Orthoptera*. T. c. pp. 47, 48.
203. —. Brunner von Wattenwyl (with portrait). T. c. pp. 1, 2.  
— [See also PEEL (983).]
204. BURROWS, C. R. N. *Phorodesma smaragdaria* Fabricius. Ent. Rec. xii, pp. 113-115, 152-154, 169-172, pl. vii. [*Lepidoptera*.]
205. BUSCK, A. New species of moths of the superfamily *Tineina* from Florida. P. U. S. Mus. xxiii, No. 1208, pp. 225-254, pl. i. [*Lepidoptera*.]
206. —. New American *Tineina*. J. N. York Ent. Soc. viii, pp. 234-248, pl. ix. [*Lepidoptera*.]  
— [See also HOWARD (616).]
207. BUTLER, A. G. *Lepidoptera rhopalocera* [in] Monograph of Christmas island [cf. ANDREWS (29)], pp. 60-63.
208. —. A revision of the butterflies of the genus *Zizera* represented in the collection of the British Museum. P. Zool. Soc. London 1900, pp. 104-111, pl. xi. [*Lepidoptera*.]
209. —. On two consignments of butterflies collected by Mr Richard Crawshaw in the Kikuyu country of British East Africa in 1899 and 1900. T. c. pp. 911-946, pl. lviii. [*Lepidoptera*.]
210. —. A list of the species of *Cyaniris*, a well-known group of the family *Lycenidae*. Ann. Nat. Hist. v, pp. 441-451. [*Lepidoptera*.]
211. —. A new genus of *Lycenidae* hitherto confounded with *Catochrysops*. Entomologist xxxiii, p. 1. [*Lepidoptera*.]
212. BUTTEL-REEPEN, H. VON. Sind die Bienen "Reflexmaschinen"? Experimentelle Beiträge zur Biologie der Honigbiene. Biol. Centrbl. xx, pp. 97, 130, 177, 209, 289. [*Hymenoptera*.]
213. \*—. Sind die Bienen Reflexmaschinen? Leipzig, 1900, 82 pp. Summary Illustr. Zeitschr. Ent. v, p. 357.
214. BUYSSON, H. DU. Descriptions d'une espèce et d'une variété nouvelles d'*Élatérides* du Caucase. Bull. Soc. ent. France 1900, pp. 231, 232. [*Coleoptera*.]
215. —. Faune Gallorhenane. *Élatérides*. Pp. 225-264. [*Coleoptera*.]  
Published in connection with Rev. Ent. franc.
216. BUYSSON, R. DU. Sur quelques *Osmies* de Tunisie. Ann. Soc. ent. France lxviii, pp. 666-668. [*Hymenoptera*.]
217. —. Contribution aux *Chrysidides* du globe. (4<sup>e</sup> série). Rev. Ent. franc. xix, pp. 125-158. [*Hymenoptera*.]
218. —. Sur quelques *Hyménoptères* de Madagascar. Ann. Soc. ent. France lxi, pp. 177-180.
219. —. Une espèce nouvelle d'*Hyménoptère* appartenant à la famille des *Tenthredinides*. Bull. Mus. Paris 1900, pp. 21, 22.
220. CAMERON, P. *Hymenoptera orientalia*, or contributions to the knowledge of the *Hymenoptera* of the oriental zoological region. Part ix. The *Hymenoptera* of the Khasia Hills. Part II, Section I. Mem. Manchester Soc. xlv, No. 15, 114 pp.

221. [CAMERON, P.] Descriptions of new genera and species of Aculeate *Hymenoptera* from the oriental zoological region. Ann. Nat. Hist. v, pp. 17-40.
222. ——. Descriptions of new genera and species of *Hymenoptera*. Op. cit. vi, pp. 410-419, 495-506, 530-541.
223. ——. Description of a new species of *Halictus* (*Andrenidæ*) from Christchurch, New Zealand. Tr. N. Zealand Inst. xxxii, pp. 17-19. [*Hymenoptera*.]
- . [See also GODMAN (511).]
224. CANDÈZE, E. [The late]. *Élatérides nouveaux*. Septième fascicule (Oeuvre posthume). Ann. Soc. ent. Belgique xlv, pp. 77-101. [*Coleoptera*.]
- . Obituary, see FRAIPONT (443).]
225. CANNAVIELLO, E. Contributo alla fauna entomologica della colonia Eritrea. Bull. Soc. ent. Ital. xxxii, pp. 289-306. [*Insecta*.]
- Severely criticised by GESTRO (493).
226. CANNON, W. A. The gall of the Monterey pine. Amer. Natural. xxxiv, pp. 801-810. [*Diptera*.]
227. CARPENTER, G. H. *Collembola* from Franz-Josef Land (collected by Mr W. S. Bruce, 1896-1897). P. Dublin Soc. ix, pp. 271-278.
228. ——. Report on economic entomology for 1899. Reprinted from Rep. of the Council R. Dublin Soc. 1899, 15 pp.
229. CASEY, T. L. Review of the American *Corylophidæ*, *Cryptophagidæ*, *Tritomidæ* and *Dermestidæ*, with other studies. J. N. York Ent. Soc. viii, pp. 51-172. [*Coleoptera*.]
230. CAUDELL, A. N. A new species of *Sinea*. Canad. Ent. xxxii, p. 67. [*Hemiptera-Heteroptera*.]
231. CECCONI, G. Danni dell' *Hylastes trifolii* Müll. verificatisi in piante legnose a Valloimbrosa. Rivist. Patol. Veg. viii, pp. 160-165, pl. viii. [*Coleoptera*.]
232. ——. Casi di danneggiamenti a piante legnose causati dal *Morimus asper* Sulz. e dal *Lamia textor* L. allo stato di insetti perfetti. T. c. pp. 219-224. [*Coleoptera*.]
233. CHAGNON, C. Études préliminaires sur les *Syrphides* de la province de Québec. Natural. Canad. xxvii, pp. 171 etc. [*Diptera*.]
234. CHAMPENOIS, A. Description d'une espèce nouvelle d'*Amphicoma* Latr. Bull. Soc. ent. France 1900, p. 248. [*Coleoptera*.]
235. CHAMPION, G. C. A species of *Scaptocoris* Perty, found at the roots of sugar-cane. Ent. Mag. xxxvi, pp. 255, 256. [*Hemiptera-Heteroptera*.]
- . [See also GODMAN (511).]
236. CHAPMAN, F. The hexagonal structure formed in cooling beeswax in relation to the cells of bees. Ann. Nat. Hist. v, p. 320.
- Relates to DAWSON & WOODHEAD (312).
237. CHAPMAN, T. A. Note on the habits and structure of *Acanthopsyche opacella* H.-Sch. Tr. ent. Soc. London 1900, pp. 403-410, pl. viii. [*Lepidoptera*.]

238. [CHAPMAN, T. A.] The relationship between the larval and imaginal legs of *Lepidoptera*. Ent. Rec. xii, pp. 141-145, 177-179, pl. vi.
239. —. A special structure in the larva of *Eriocampa limacina*. Ent. Mag. xxvi, p. 228. [*Hymenoptera*.]
240. —. On the moult to pupa in *Pterophorus*. Entomologist xxxiii, pp. 82-85. [*Lepidoptera*.]
241. —. Notes on the Fumeids, with descriptions of new species and varieties. Ent. Rec. xii, pp. 59-62, 89-93, 122-125, pls. iv, v. [*Lepidoptera*.]
242. —. Some points in the evolution of the *Lepidopterous* antenna. P. S. London ent. Soc. 1899, pp. 1-19.  
— [See also TUTT (1340).]
243. \*CHITTENDEN, F. H. Insect enemies of the white pine. Bull. U. S. Dep. Agric. Forestry xxii, 1899, 95 pp.  
Cf. Illustr. Zeitschr. Ent. v, p. 175.  
— [See also HOWARD (616).]
244. CHABAUT, A. Description d'un *Opatride* nouveau de la Tunisie méridionale. Bull. Soc. ent. France 1900, p. 31. [*Coleoptera*.]
245. —. Description d'un *Longicorne* nouveau, du nord de l'Algérie. T. c. p. 265. [*Coleoptera*.]
246. —. Description d'une *Phaleria* nouvelle d'Algérie. T. c. p. 340. [*Coleoptera*.]
247. CHOLODKOVSKY, N. Ueber den Lebenscyklus der *Chermes*-Arten und die damit verbundenen allgemeinen Fragen. Biol. Centrbl. xi, pp. 265-283. [*Aphidæ*.]
248. —. Ueber den männlichen Geschlechtsapparat von *Chermes*. T. c. p. 619. [*Aphidæ*.]
249. —. Über den Geschlechtsapparat von *Parnassius mnemosyne* L. Illustr. Zeitschr. Ent. v, pp. 70-72. [*Lepidoptera*.]
250. CHRÉTIEN, P. Description d'une nouvelle espèce de *Microlépidoptère* de France. Bull. Soc. ent. France 1900, p. 90.
251. —. Description d'une nouvelle espèce de *Microlépidoptère* de France. T. c. p. 138.
252. —. Description d'une nouvelle espèce de *Microlépidoptère* de France. T. c. p. 162.
253. —. Description d'une nouvelle espèce de *Microlépidoptère* de France. T. c. p. 191.
254. —. Description d'une nouvelle espèce de *Microlépidoptère* de France. T. c. p. 223.
255. —. Les *Coleophora* du *Dorycnium*. Naturaliste xxii, pp. 68-70. [*Lepidoptera*.]
256. —. Histoire naturelle de l'*Exapate duratella* v. Heyd. T. c. pp. 118-120. [*Lepidoptera*.]

257. CHRISTOPHERS, S. R. & STEPHENS, J. W. W. Further reports to the Malaria Committee 1900. R. Soc. London 1900, 22 pp.
1. The native as the prime agent in the malarial infection of Europeans.
  2. Note on certain bodies found in the glands of two species of mosquitoes.
  3. The malaria of expeditionary forces and the means of its prevention.
- . [See also STEPHENS & CHRISTOPHERS (1281) and DANIELS, STEPHENS & CHRISTOPHERS (310).]
258. CHURCHEVILLE PIEL DE, H. & TH. Sur le *Bacillus gallicus*. Miscell. ent. viii, pp. 3-6. [*Orthoptera*.]
259. CIACCIO, G. V. Degli occhi nei generi *Potamanthus* e Cloë della famiglia delle *Ephemeridae*, e come eglino sono composti e intessuti. Rend. Acc. Bologna 1895, 6, pp. 91-95.
- CLEMENTS, W. G. [See SYKES, M. L. (1300).]
260. CLOUËT DES PESRUCHES, L. Notes sur diverses espèces d'*Aphodiides* genres *Psammodius* et *Sicardia* et description d'une espèce nouvelle. Ann. Soc. ent. Belgique xliv, pp. 11-15. [*Coleoptera*.]
261. ———. Description d'un genre nouveau et de deux nouvelles espèces de la tribu des *Aphodiides*. Ann. Soc. ent. Belgique xliv, pp. 247, 248. [*Coleoptera*.]
262. ———. Description d'un nouveau genre et d'une espèce nouvelle d'*Aphodiide* et note sur le genre *Epitissus*. Bull. Soc. ent. France 1900, pp. 122, 123. [*Coleoptera*.]
263. COCKERELL, T. D. A. The lower and middle Sonoran zones in Arizona and New Mexico. Amer. Natural. xxxiv, pp. 285-295.
264. ———. Some insects of the Hudsonian zone in New Mexico. I. *Arachnida*, *Neuroptera*, NATHAN BANKS; *Orthoptera*, S. H. SCUDDER; *Lepidoptera*, *Noctuidæ*, J. B. SMITH. Psyche ix, pp. 123-126.
265. ———. Observations on insects. Bull. 35 New Mexico exp. Stat. 27 pp.
266. ———. List of Bulletins. Bull. 36 op. cit. pp. 29-31.
267. ———. Reports of the Entomologist. Ann. Rep. New Mexico Coll. 1898-1900, pp. 22-29 and 67-72.
268. ———. *Diplosis parthenicola*, n. sp. Entomologist xxxiii, p. 201. [*Diptera*.]
269. ———. *Asphondylia mentzeliae*, n. sp. T. c. p. 302. [*Diptera*.]
270. ———. *Scriptotricha* or *Paracantha*? Ann. Nat. Hist. v, p. 400. [*Diptera*.]
- Raises a difficult question of nomenclature.
271. ———. Some bees visiting the flowers of Mesquite. Entomologist xxxiii, pp. 243-245. [*Hymenoptera*.]
272. ———. Observations on bees collected at Las Vegas, New Mexico, and in the adjacent mountains. Ann. Nat. v, pp. 401-416. [*Hymenoptera*.]
273. ———. The New Mexico bees of the genus *Megachile* and a new *Andrena*. Op. cit. vi, pp. 7-20. [*Hymenoptera*.]
274. ———. Descriptions of new bees collected by Mr H. H. Smith in Brazil. I. P. Ac. Philad. 1900, pp. 356-377. [*Hymenoptera*.]



275. [COCKERELL, T. D. A.] The *Cactus* bees: genus *Lithurgus*. Amer. Natural. xxxiv, pp. 487, 488. [*Hymenoptera*.]
276. —. The New Mexican bees of the genus *Celioxys*. Canad. Ent. xxxii, pp. 297–301. [*Hymenoptera*.]
277. —. Notes on New Mexico bees. T. c. pp. 361–364. [*Hymenoptera*.]
278. —. A new oak-gall from New Mexico. T. c. p. 91. [*Hymenoptera*.]
279. —. New insects from Arizona, and a new bee from Mexico. Entomologist xxxiii, pp. 61–66. [*Hymenoptera*, *Hemiptera-Heteroptera*.]
280. —. Some *Coccidæ* quarantined at San Francisco. Psyche ix, pp. 70–72.
281. —. Table of North American *Kermes*, based on external characters. T. c. pp. 44, 45. [*Coccidæ*.]
282. —. Four new *Coccidæ* from Arizona. Canad. Ent. xxxii, pp. 129–132.
283. —. A new genus of *Coccidæ*, injuring the roots of the grape-vine in S. Africa. Entomologist xxxiii, p. 173.
284. —. Some new *Coccidæ* collected at Campinas, Brazil, by Dr F. Noack. Revist. Mus. Paulista iii, pp. 41, 42.
285. —. Some *Coccidæ* collected by Dr F. Noack at Campinas, Brazil. T. c. pp. 43, 44.
286. —. Mais algumas *Coccidæ* collegidas pelo Dr F. Noack. T. c. pp. 501–503.
287. COLLEDGE, W. R. Observations on the life history of the common mosquito. P. Soc. Queensland xv, pp. 111–131, pls. ii, iii. [*Diptera*.]  
COLLEGE, M. [See TINSLEY & COLLEGE (1322).]
288. COQUILLETT, D. W. Report on a collection of *Dipterous* insects from Puerto Rico. P. U. S. Mus. No. 1198, xxii, pp. 249–270.
289. —. Descriptions of two new species of *Diptera* from Western Australia. P. Linn. Soc. N. S. Wales xxv, pp. 389, 390.
290. —. Papers from the Harriman Alaska expedition. Entomological results (3). *Diptera*. P. Washington Ac. ii, pp. 389–464.
291. —. Two new genera of *Diptera*. Ent. News Philad. xi, pp. 429, 430.
292. —. New *Scenopinidæ* from the United States. Ent. News Philad. xi, pp. 500, 501. [*Diptera*.]
293. —. New genera and species of *Ephydridæ*. Canad. Ent. xxxii, pp. 33–36. [*Diptera*.]
294. —. Notes and descriptions of *Ortulidæ*. J. N. York Ent. Soc. viii, pp. 21–25. [*Diptera*.]  
— [See also HOWARD (616).]
296. \*CORDLEY, A. B. Insects of the Prune. Bull. Oregon exp. Stat. xlv, pp. 99–127, 3 pls.  
Cf. Illustr. Zeitschr. Ent. v, p. 60.

296. CROISSANDEAU, J. Monographie des *Scydmenida*. [Conclusion.] Ann. Soc. ent. France lxi, pp. 116-170, pls. iv-xiv. [Coleoptera.]
297. CROWLEY, P. On the butterflies collected by the late Mr John Whitehead in the interior of the island of Hainan. P. Zool. Soc. London 1900, pp. 505-511, pl. xxxv. [Lepidoptera.]
298. CSIKI, E. *Endomychidæ* a L. Biró in Nova Guinea et in Malacca collectæ. Termes. Fuzetek xxiii, pp. 123-125. [Coleoptera.]
299. —. *Promecotheca papuana*, n. sp. T. c. p. 80. [Coleoptera.]
300. —. *Hispidæ* tres novæ. T. c. p. 196. [Coleoptera.]
301. —. Die *Endomychiden*-Gattung *Milichius* Gerst. T. c. pp. 375-377. [Coleoptera.]
302. —. *Coleoptera* nova in collectione Musei nationalis Hungarici. T. c. pp. 400-403.
303. —. Magyarország *Cicindela*-féléi. (*Cicindelidæ*.) Potfuz Termes. Kozl. xxxii, pp. 133-148. [Coleoptera.]
304. CUÉNOT, L. Sur la détermination du sexe chez les animaux. Bull. Sci. France Belgique xxxii, pp. 462-535.  
To a considerable extent entomological. Extensive bibliographic list.
305. \*CUNNINGHAM, J. T. Sexual dimorphism in the animal kingdom; a theory of the evolution of secondary sexual characters. London, 1900, xi and 317 pages.  
Includes a chapter on mimicry. Cf. Nature lxiii, p. 201.
306. CZERNY, L. Neue österreichische *Dipteren*. Wien. ent. Zeit. xix, pp. 180-182.
307. —. Eine neue *Scaptophila* aus Oesterreich. T. c. p. 205. [Diptera.]
308. —. Neue österreichische *Aricia*-Arten. T. c. pp. 271-274. [Diptera.]
309. DANIELS, C. W. On transmission of *Proteosoma* to birds by the mosquito. Reports to the malaria Committee. Royal Soc. London i, pp. 1-11.
310. —, STEPHENS, J. W. W. & CHRISTOPHERS, S. R. Reports to the malaria Committee. Third series. Royal Soc. London 1900, 45 pp. [For I see (1281) and for II see (257).]
311. DANNATT, W. Description of a new species of *Dircenna* from Peru. Entomologist xxxiii, p. 299. [Lepidoptera.]
312. DAWSON, C. & WOODHEAD, S. A. The hexagonal structure naturally formed in cooling beeswax, and its influence on the formation of the cells of bees. Ann. Nat. Hist. v, pp. 121-126.  
Cf. CHAPMAN (236).  
DECKERT, H. F. [See STANDFUSS (1266).]
313. DEGENER, P. Entwicklung der Mundwerkzeuge und des Darmkanals von *Hydrophilus*. Zeitschr. wiss. Zool. lxviii, pp. 113-168, pls. viii-x.  
Summary by HEYMONS, Zool. Centrbl. vii, pp. 808-811.
314. DESBROCHERS DES LOGES, J. Espèces inédites de *Curculionides* de l'ancien monde. vi. Frelon viii, pp. 1-16.

315. [DESBROCHERS DES LOGES, J.] Premier supplément à la monographie des *Baridiidæ*. T. c. pp. 41-44. [*Coleoptera*.]
316. —. Description d'un *Curculionide* inédit de France du genre *Cathormiocerus* et tableau synoptique des espèces françaises de ce genre. T. c. pp. 44-46. [*Coleoptera*.]
317. DIERCKX, F. Les glandes pygidiales du *Pheropsophus bohemani* Chaud. Zool. Anz. xxiii, pp. 15-18. [*Coleoptera*.]
318. DIETZ, W. G. Some new genera and species of N. A. *Tineina*. Ent. News Philad. xi, pp. 349-353, pl. i. [*Lepidoptera*.]
319. DIETZE, K. Beiträge zur Kenntniss der *Eupitheciæ*. Deutsche ent. Zeitschr. Lep. xiii, pp. 95-102, pl. i. [*Lepidoptera*.]
320. DISTANT, W. L., assisted by many Specialists. Insecta Transvaaliensia: a contribution to a knowledge of the Entomology of South Africa. Part i. *Orthoptera*. 24 pp., pls. 1, 2. 4to, London, 1900.
- The descriptions of new *Forficulidæ* are by W. F. KIRBY.
321. —. Notes on a collection of African *Blattidæ*, chiefly from the Transvaal, formed by Mr W. L. Distant. Ann. Nat. Hist. v, pp. 277-294. [*Orthoptera*.]
322. —. Rhynchotal notes. iv. *Heteroptera: Pentatominae* (part). T. c. pp. 386-397, 420-435.
323. —. Rhynchotal notes. v. *Heteroptera: Asopinae* and *Tessera-tominae*. Op. cit. vi, pp. 55-64.
324. —. Rhynchotal notes. vi. *Heteroptera: Dinidorinae, Phyllocephalinae, Urolabidinae* and *Acanthosominae*. T. c. pp. 220-234.
325. —. Rhynchotal notes. vii. *Heteroptera: Fam. Coreida*. T. c. pp. 366-380.
326. —. Revision of the *Rhynchota* belonging to the family *Pentatomidæ* in the Hope collection at Oxford. P. Zool. Soc. London 1900, pp. 807-824, pls. lii, liii.
327. —. Undescribed genera and species belonging to the *Rhynchotal* family *Pentatomidæ*. Tr. ent. Soc. London 1900, pp. 163-174, pl. ii.
328. —. Contributions to a knowledge of the *Rhynchota*. Tr. ent. Soc. London 1900, pp. 665-697, pl. ix.  
i, Eastern *Cercopidæ*, pp. 665-686; ii, *Rhynchota* of Central America, pp. 687-695; iii, *Heteroptera* from Borneo, pp. 695-697.
329. —. Undescribed African *Rhynchota*. Ent. Mag. xxxvi, p. 82.
330. —. Description of a new species of *Cicadidæ* from China. Entomologist xxxiii, p. 209. [*Hemiptera-Homoptera*.]
331. —. On a small collection of *Lepidoptera* from Pemba Island. T. c. p. 261.
332. —. Biological suggestions. Mimicry. Part i. Zoologist 1899, pp. 289-315, 341-363, 443-470, 529-553; and op. cit. 1900, pp. 116-130.

Cf. MARSHALL (860) and POULTON (1053).

— [See also GODMAN (511).]

DIXEY, F. A. [See PEEL (983).]

333. DOANE, R. W. New North American *Tipulidæ*. J. N. York Ent. Soc. viii, pp. 182-198, pls. vii, viii. [*Diptera*.]
334. —. Notes on a new sugar-beet pest, with a description of the species. Ent. News Philad. xi, pp. 390, 391. [*Aphididæ*.]
335. DODERO, A. Materiali per lo studio dei *Coleotteri* italiani con descrizioni di nuove specie. Ann. Mus. Genova xl, pp. 400-419.
336. —. Viaggio di Leonardo Fea in Birmania e regioni vicine. LXXXII. *Corylophidæ* e *Pseudocorylophidæ*. T. c. pp. 563-566. [*Coleoptera*.]
337. —. Res ligusticæ. XXXII. Nuovo *Leptotyphlus* del Genovesato. T. c. pp. 573, 574. [*Coleoptera*.]
338. DODGE, G. M. *Cutocala titania*, n. sp. Ent. News Philad. xi, p. 472. [*Lepidoptera*.]
339. \*DOERSTLING, P. *Aphis* of the sugar-beet. Zeitschr. Pflanzen-Krank. 1900, p. 21. [*Aphidæ*.]  
Cf. J. R. Micr. Soc. 1901, p. 32.
340. DOGNIN, P. Hétérocères nouveaux de l'Amérique du Sud. Ann. Soc. ent. Belgique xlv, pp. 213-233. [*Lepidoptera*.]
341. —. Hétérocères nouveaux de l'Amérique du Sud. T. c. pp. 436-452. [*Lepidoptera*.]
342. DOHRN, H. Ueber schädliche Insekten und ein sachverständiges Gutachten. Ent. Zeit. Stettin lxi, pp. 149-163.
343. DOMINIQUE, J. Additions et annotations au Catalogue des *Orthoptères* de la Loire-inférieure. Bull. Soc. Ouest France x, pp. 73-90.
344. —. Fourmis jardinières. T. c. pp. 163-168. [*Hymenoptera*.]  
*Atta 6-dens* and fungi.
345. —. Trois *Orthoptères* nouveaux du Congo français. T. c. pp. 203-210, pl. iii.
346. DONISTHORPE, H. St J. K. A few notes on Myrmecophilous *Coleoptera*. Ent. Rec. xii, pp. 172-176.  
List of the British.  
— [See also WASMANN (1382).]
347. DORIA, G. & GESTRO, R. Annali del Museo civico di Storia naturale di Genova. Indice generale sistematico delle due prime serie. (Vol. I, 1870 à XL, 1901.) Genova 1901, 48 pp.
348. DRUCE, H. Descriptions of some new genera and species of *Heterocera* from tropical South America. Ann. Nat. Hist. v, pp. 507-527.
349. —. Descriptions of some new species of *Heterocera* from tropical South America. Op. cit. vi, pp. 64-67.  
— [See also GODMAN (511) and PEEL (983).]
350. DUBOIS, R. Sur le mécanisme de la biophotogénèse. C.R. Soc. Biol. lii, pp. 569, 570.  
DUBOSCQ, O. [See LÉGER & DUBOSCQ (810-812).]
351. DUCKE, A. Die Bienengattung *Osmia* Panz., als Ergänzung zu Schmiedeknecht's "*Apidae europææ*," Vol. II in ihren palaearctischen Arten monographisch bearbeitet. Ber. Ver. Innsbruck xxv, pp. 1-323. [*Hymenoptera*.]

352. DUDGEON, G. C. A catalogue of the *Heterocera* of Sikhim and Bhutan. With notes by H. J. ELWES and additions by Sir GEORGE F. HAMPSON. Part VII. J. Bombay Soc. xiii, pp. 77-84, pl. ii. Part VIII. T. c. pp. 258-268, pl. iii. Part IX. T. c. pp. 406-425. [*Lepidoptera*.]
353. DUPONT, L. Les *Zygènes* de la Normandie. Bull. Soc. Elbeuf xviii, pp. 49-78. [*Lepidoptera*.]  
DURRANT, J. H. [See SWINHOE (1298).]
354. DYAR, H. G. Life histories of some North American moths. P. U. S. Mus. xxiii, No. 1209, pp. 255-284. [*Lepidoptera*.]
355. —. On the larvæ of *Atomocera* and some other saw-flies. J. N. York Ent. Soc. viii, pp. 26-31. [*Hymenoptera*.]
356. —. A new *Zygenid* from Arizona. T. c. p. 32. [*Lepidoptera*.]
357. —. Preliminary notes on the larvæ of the genus *Arctia*. T. c. pp. 34-47. [*Lepidoptera*.]
358. —. Notes on the larval-cases of *Lacosomidæ* (*Perophoridae*) and life-history of *Lacosoma chiridota* Grt. T. c. pp. 177-180, pl. vi. [*Lepidoptera*.]
359. —. Life histories of North American *Geometridæ*. VIII-XVII. Psyche ix, pp. 7 etc. [*Lepidoptera*.]
360. —. Papers from the Harriman Alaska expedition. Entomological results (6). *Lepidoptera*. P. Washington Ac. ii, pp. 487-501.  
Includes descriptions of new species by BEUTENMUELLER & SMITH, FERNALD, HULST & OTTOLENGUI.
361. —. A new *Cochlidian* of the palearctic [sic] group. Ent. News Philad. xi, p. 333. [*Lepidoptera*.]
362. —. Life history of a South American slug-caterpillar *Sibine fusca* Stoll. T. c. pp. 517-526, pl. xiii. [*Lepidoptera*.]
363. —. Notes on some N. American *Yponomeutidæ*. Canad. Ent. xxxii, pp. 37-41, 84-86. [*Lepidoptera*.]
364. —. Notes on some North American species of *Tineidæ*. T. c. pp. 305-311. [*Lepidoptera*.]
365. —. New species of *Anaphorinæ*. T. c. pp. 326-328. [*Lepidoptera*.]
366. EAST, A. On the respiration of certain dragon-fly nymphs. Knowledge 1900, pp. 220, 221. [*Odonata*.]
367. EHRHORN, E. M. New *Coccidæ* from California. Canad. Ent. xxxii, pp. 311-318, pl. vii.
368. ELWES, H. J. On the butterflies of Bulgaria. Tr. ent. Soc. London 1900, pp. 183-206, pl. iv. [*Lepidoptera*.]  
— [See also DUDGEON (352).]
369. EMERY, C. Intorno al torace delle formiche e particolarmente dei neutri. Bull. Soc. ent. Ital. xxxii, pp. 103-119. [*Hymenoptera*.]
370. —. Aggiunte e correzioni al saggio d' un catalogo sistematico dei generi *Camponotus*, *Polyrachis* e affini. Rend. Acc. Bologna (n.s.) ii, 1898, pp. 225-231. [*Hymenoptera*.]
371. —. Descrizioni di Formiche nuove malesi et australiane: note sinonimiche. T. c. pp. 231-245, plate unnumbered. [*Hymenoptera*.]

372. [EMERY, C.] Intorno alle larve di alcune formiche. Op. cit. iii, 1899, p. 93. [*Hymenoptera*.]
373. —. Ueber Ameisen-larven. Verh. Ges. deutsch. Naturf. lxxi, 2. 1, pp. 233, 234.  
Very brief and almost identical with (372), but discussed by FOREL.  
A longer dissertation is said to appear in Mem. Acc. Bologna, but we have not yet seen it.
374. —. Beiträge zur Kenntniss der paläarktischen Ameisen. Ofv. Finska Forh. xl, pp. 124–151. [*Hymenoptera*.]
375. —. *Formicidurum* species novæ vel minus cognitæ in collectione musæi nationalis hungarici, quas in Nova-Guinea, Colonia germanica, collegit L. Biró. Publicatio secunda. Termes. Fuzetek xxiii, pp. 310–338, pl. viii. [*Hymenoptera*.]
376. —. Formiche raccolte da Elio Modigliani in Sumatra, Engano e Mentawai. Ann. Mus. Genova xl, pp. 661–722. [*Hymenoptera*.]
377. ENDERLEIN, G. Die *Psociden*-fauna Perus. Zool. Jahrb. Syst. xiv, p. 134, pls. viii, ix. [*Neuroptera*.]
378. —. *Epipsocus ciliatus* Hagen, eine *Psocide* des Bernsteins und die recente peruanische *Epipsocus nepos*, nov. sp. Berlin. ent. Zeitschr. xlv, pp. 108–112. [*Neuroptera*.]
379. ERRINGTON DE LA CROIX, MME. Observations sur le *Termes carbonarius* Haviland. Bull. Mus. Paris 1900, pp. 22, 23. [*Neuroptera*.]
380. ESCALERA, M. M. DE LA. Examen del Grupo *Bathysciæ* de España. An. Soc. Espan. xxviii, pp. 363–412. [*Coleoptera*.]
381. —. Descripciones de algunas nuevas especies de "*Dorcadion*." Act. Soc. Espan. 1900, pp. 232–241. [*Coleoptera*.]
382. ESCHERICH, K. Über die Keimblätterbildung bei den *Musciden*. Verh. Deutsch. zool. Ges. 1900, pp. 130–134.  
Includes a discussion by various authorities, KORSCHOLT, HEIDER, HERTWIG.
383. —. Ueber das regelmässige Vorkommen von Sprosspilzen in dem Darmepithel eines Käfers. Biol. Centrbl. xx, pp. 350–358.  
Summary by the author in Zool. Centrbl. vii, p. 513.
384. —. Myrmekophilen. Verh. Ver. Karlsruhe xiii, pp. 103, 104, and 137–139. [*Hymenoptera*.]  
EUSÉBIO, A. [See BRUYANT & EUSÉBIO (190).]
385. FABRE, J. H. Souvenirs entomologiques. Septième série. Paris, not dated, 8vo, 395 pp. [*Coleoptera*, *Hemiptera*, *Lepidoptera*.]
386. —. Les *Psyches*. Rev. Quest. Sci. (2) xviii, pp. 5–39. [*Lepidoptera*.]
387. FAILLA-TEDALDI, L. Glossario entomologico. Continuazione e fine. Boll. Nat. xx, pp. 46–53.  
This has been running for some years and is now completed.
388. \*FAIRCHILD, D. G. & COOK, O. F. Fungus gardening as practised by Termites in West Africa. Science viii, p. —.
389. FAIRMAIRE, L. Descriptions de *Coléoptères* nouveaux recueillis en Chine par M. de Latouche. Ann. Soc. ent. France lxxviii, pp. 616–643.

390. [FAIRMAIRE, L.] *Coléoptères. Héloères.* Diagnoses d'insectes recueillis par l'expédition antarctique belge. Ann. Soc. ent. Belgique xliv, pp. 111, 112.
391. —. Descriptions de *Coléoptères* malgaches. T. c. pp. 241-247.
392. —. Description d'un nouveau genre de *Coléoptères* du groupe des *Rhysoptères*. Bull. Soc. ent. France 1900, p. 45.
393. —. Description d'une espèce nouvelle du genre *Strongylium*. T. c. p. 45. [*Coleoptera*.]
394. —. Descriptions de *Coléoptères* recueillis par M. H. Perrier de la Bâthie à Madagascar. T. c. p. 85.
395. —. Descriptions de quelques *Coléoptères* malgaches. T. c. pp. 134-136.
396. —. Description d'une *Luciole* nouvelle de Madagascar et de sa larve. T. c. pp. 361, 362. [*Coleoptera*.]  
— [See also ALLUAUD (22).]
397. FALL, H. C. List of a small collection of *Coleoptera* from Arctic Alaska. Ent. News Philad. xi, pp. 459, 460.  
FAUST, J. [See HELLER (574).]
398. FAUVEL, A. *Staphylinides* nouveaux de Barbarie. Rev. Ent. franc. xix, pp. 57-61. [*Coleoptera*.]
399. —. *Amblyopinus*, *Myotyphlus* et *Edrabius*. T. c. pp. 61-66. [*Coleoptera*.]
400. —. *Staphylinides* nouveaux de Kinchassa (Congo). T. c. pp. 66-74. [*Coleoptera*.]
401. —. Sur une tribu nouvelle de *Staphylinides*. T. c. pp. 123, 124. [*Coleoptera*.]
402. —. Nouveau genre de *Tachyporien* du Caucase. T. c. p. 160. [*Coleoptera*.]
403. —. Sur les *Oxytelus* de Nouvelle-Zélande. T. c. pp. 181-189. [*Coleoptera*.]
404. —. *Staphylinides* paléarctiques nouveaux. T. c. pp. 218-253. [*Coleoptera*.]
405. FAVRE, E. Faune des *Macro-Lépidoptères* du Valais et des régions limitrophes. Avec la collaboration d'A. WULSCHLEGEL. Schaffhouse, 1899, 8vo, xvi and 318 pp.  
Issued by the Swiss entomological Society, uniform with its other volumes on Swiss insects.
406. FAWCETT, J. M. Notes on the transformations of some South-African *Lepidoptera*. Tr. Zool. Soc. London xv, pp. 291-322, pls. xli-xlix.
407. FELT, E. P. 14th report of the State entomologist on injurious and other insects of the State of New York, 1898. Albany, 1898. Bull. N. York Mus. v, No. 23, pp. 195-295.
408. —. Supplement to the 14th report... Memorial of life and entomologic work of Joseph Albert Lintner, Ph.D. T. c. No. 24, pp. 303-611, portrait.  
An alphabetical Bibliography of his works.

409. [FELT, E. P.] 15th Report of the State entomologist on injurious and other insects of the State of New York, 1899. Op. cit. No. 31, June 1900, pp. 533-653.
410. —. Insects injurious to Forest trees. Rep. Comm. Fisheries-Forests, New York 1898, iv, 31 pp. cuts, 3 pls.
411. —. Shadetree pests in New York State. T. c. No. 27, pp. 38-60.
412. —. Collection, preservation and distribution of New York Insects. Op. cit. vi, No. 26, pp. 4-34.
413. FELTHAM, H. L. L. Notes on variations of *Zeritis thysbe* L. P. ent. Soc. London 1900, pp. xix-xxii. [*Lepidoptera*.]
414. \*FERMI, C. & LUMBAU, C. Contributo alla profilassi della malaria. Tentativi di protezione dell' uomo contro le zanzare mediante mezzi chimici. Ann. Igiene sperim. x, pp. 89-92, Roma, 1900.  
Cf. Monit. Zool. ital. xi, p. 281.
415. \*— & —. Liberazione di una città dalle zanzare. Ann. Igiene sperim. x, pp. 317-353. Roma, 1899.  
Cf. Monit. Zool. ital. xi, p. 281.
416. FERNALD, C. H. On the North American species of *Choreutis* and its allies. Canad. Ent. xxxii, pp. 236-245. [*Lepidoptera*.]
417. —. Zoology as taught at the Massachusetts Agricultural College, with reference to entomology. Ent. News Philad. xi, pp. 359-362.  
— [See also DYAR (360).]
418. FERTON, C. Observations sur l'instinct des *Bembex* Fabr. (*Hyménoptères*). Act. Soc. Bordeaux (6) iv, pp. 331-345.
419. FIELDE, ADELE M. Portable Ant nests. Biol. Bull. ii, pp. 81-85.
420. FISCHER, E. Neue experimentelle Untersuchungen und Betrachtungen über das Wesen und die Ursachen der Aberrationen in der Faltergrudde [sic] *Vanessa*. Berlin, 8vo, 1896, pp. 67, 2 pls. [*Lepidoptera*.]
421. —. *Lepidopterologische* Experimental-Forschungen. Kritische Abhandlung über Ursache und Wesen der Kälte-Varietäten der *Vanessen*. Illustr. Zeitschr. Ent. v, pp. 4-6, 20-22.
422. —. Dritte Mitteilung über Farbenmuster-Kopie bei Falterpuppen. T. c. v, p. 154. [*Lepidoptera*.]
423. FLEISCHER, A. Neue *Coccinelliden* aus der Sammlung des Kais. Rathes Herrn Edmund Reitter. Wien. ent. Zeit. xix, pp. 116-120. [*Coleoptera*.]
424. —. *Neuraphes* (*Pararaphes*) *puncticeps*, n. sp. T. c. p. 232. [*Coleoptera*.]
425. —. Bestimmungs-Tabelle der Arten der *Coleopteren*-Gattung *Lionychus* Schmidt-Göbel. T. c. pp. 233, 234.
426. —. Ueber die *Coleopt.*-Gattung *Scymnus* Kugelann. T. c. p. 235.
427. —. Uebersichtstabelle der Arten der *Coleopteren*-Gattung *Palorus* Duv. T. c. pp. 236, 237.
428. FLETCHER, J. Recent additions to the list of injurious Insects of Canada. Tr. R. Soc. Canada (2) v, Sect. iv, pp. 207-231.
429. FLEUTIAUX, E. *Élateridæ* nouveaux de Madagascar. Bull. Mus. Paris 1899, pp. 367-370. [*Coleoptera*.]



430. FLORENTIN, R. Études sur la faune des mares salées de Lorraine. Ann. Sci. Nat. x, pp. 209-349.  
Insects, pp. 274-276; Acclimatation, pp. 280-284.
431. FOERSTER, F. Libellen, gesammelt im Jahre 1898 in Central-Asien von Dr J. Holderer. Wien. ent. Zeit. xix, pp. 253-267, pl. iii. [*Odonata*.]
432. —. *Odonaten* aus Neu-Guinea. Termes. Fuzetek xxiii, pp. 81-108.
433. FOLSOM, J. W. The development of the mouth-parts of *Anurida maritima* Guer. Bull. Mus. Harvard xxxvi, No. 5, pp. 87-157, pls. i-viii.  
Summary, J. R. Micr. Soc. 1901, p. 148. Summary and criticism, HEYMONS (593).
434. FOREL, A. Expériences et remarques critiques sur les sensations des Insectes. Première partie. Revist. Sci. Nat. ii, No. 8, 41 pp., pl. iii. Deuxième partie. T. c. No. 9, 76 pp.
435. —. Les *Formicidae* de l'empire des Indes et de Ceylan. Part vi. J. Bombay Soc. xiii, pp. 52-65. Part vii. T. c. pp. 303-332. Part viii. T. c. pp. 462-477. [*Hymenoptera*.]  
*Ponerinae* and *Dorylinae*: for Part v, see op. cit. ix.
436. —. Un nouveau genre et une nouvelle espèce de *Myrmicide*. Ann. Soc. ent. Belgique xlv, pp. 24-26. [*Hymenoptera*.]
437. —. *Ponerinae* et *Dorylinae* d'Australie récoltées par Mm. Turner, Froggatt, Nugent, Chase, Rothney, J. J. Walker, etc. T. c. pp. 54-77. [*Hymenoptera*.]
438. —. Fourmis du Japon. Nids en toile. *Strongylognathus huberi* et voisins. Fourmilière triple. *Cyphomyrmex wheeleri*. Fourmis importées. Mt. Schweiz. ent. Ges. x, pp. 267-287. [*Hymenoptera*.]
439. —. Ueber nordamerikanische Ameisen. Verh. Ges. deutsch. Naturf. lxxi, 2. 1, pp. 239-242. [*Hymenoptera*.]  
Habits.  
— [See also GODMAN (511).]
440. FORMANEK, R. Eine neue *Lochmæa* Wse. Wien. ent. Zeit. xix, p. 127. [*Coleoptera*.]
441. —. Synoptische Übersicht der *Phænops*-Arten, aus der palæarctischen Fauna. T. c. pp. 167, 168. [*Coleoptera*.]  
FOWLER, W. W. [See GODMAN (511).]
442. FOX, W. J. Arrangement of the extra-American species of *Mutilla* (described by Cresson and Blake) according to my classification of the genus. Ent. News Philad. xi, pp. 400, 401. [*Hymenoptera*.]
443. FRAIPONT, J. Le Dr Ernest Candèze. Mem. Soc. Liège (3) i, pp. 2-18.  
With portrait and bibliography.
444. \*FRANK, A. B. & KRÜGER, F. Schildlausbuch. Beschreibung und Bekämpfung der für den deutschen Obst- und Weinbau wichtigsten Schildläuse. Berlin, 1900.  
Summary in Illustr. Zeitschr. v, p. 155. Information as to metamorphosis. Review by DALLA TORRE, Zool. Centrbl. vii, pp. 252-254.

445. FRENCH, C. Report by the Entomologist. Rep. Dep. Agric. Victoria 1899, pp. 129-176.
446. FRENCH, G. H. The genus *Catocala*. Canad. Ent. xxxii, pp. 188-191. [*Lepidoptera*.]
447. —. A parasite the supposed cause of some cases of epilepsy. T. c. pp. 263, 264. [*Diptera*.]
448. FREY-GESSNER, E. Beschreibung von Zwei neuen *Prosopis*-Arten. Mt. Schweiz. ent. Ges. x, pp. 227-231. [*Hymenoptera*.]
449. FRIESE, H. *Hymenoptera* von Madagaskar. *Apida*, Fossores und *Chrysidida*. Abh. Senckenb. Ges. xxvi, pp. 259-268.
450. —. Monographie der Bienengattung *Megacilissa*, *Cauloplicana* und *Oxaca*. (Nachtrag zum 1. Theil.) Ann. Hofmus. Wien xiv, pp. 239-246. [*Hymenoptera*.]
451. —. Monographie der Bienengattungen *Exomalopsis*, *Ptilothrix*, *Melitoma* und *Tetrapedia*. T. c. pp. 247-304. [*Hymenoptera*.]
452. —. Neue Arten der Bienengattungen *Epicharis* Klug und *Centris* Fabr. Termes. Fuzetek xxiii, pp. 39-48. [*Hymenoptera*.]
453. —. Neue Arten der Bienengattungen *Centris* und *Epicharis*. T. c. pp. 117-122. [*Hymenoptera*.]
454. —. Bemerkungen zur Bienengattung *Euglossa* Latr. T. c. pp. 121, 122. [*Hymenoptera*.]
455. —. Neue Arten der Bienengattungen *Melipona* Ill. und *Trigona* Jur. T. c. pp. 381-394. [*Hymenoptera*.]
456. —. Neue exotische Schmarotzerbienen. Ent. Nachr. xxvi, pp. 65-67. [*Hymenoptera*.]
457. —. Neue palæarktische Bienenarten. T. c. pp. 85-87. [*Hymenoptera*.]
458. —. Neue Bienenarten Süd-America's. T. c. pp. 180-184. [*Hymenoptera*.]
459. —. Ein auffallender Gynandromorphismus von *Pepsis brunei-cornis* R. Luc. (*Hymenopt.*) Illustr. Zeitschr. Ent. v, pp. 22-24.
460. FRINGS, C. Experimente mit erniedrigter Temperatur im Jahre 1899. Soc. ent. xv, pp. 25-27, 33-36. [*Lepidoptera*.]
461. FROGGATT, W. W. Australian *Psyllida*. P. Linn. Soc. N. S. Wales xxv, pp. 250-302, pls. xi-xiv. [*Hemiptera-Homoptera*.]
462. —. Notes on Australian *Coccida* (Scale Insects). 1. Genus *Eriococcus*. Agric. Gaz. N. S. W. xi, pp. 99-107, 1 pl.
463. —. Plague locusts. T. c. pp. 175-183. [*Orthoptera*.]
464. —. The Hessian fly (*Cecidomyia destructor* Say) and allied grain pests. T. c. pp. 269-274, 1 pl. [*Diptera*.]  
A precautionary paper. The fly is not known in Australia.
465. —. Insects and birds. T. c. pp. 436-446.
466. —. Insects living in figs, with some account of caprifigation. T. c. pp. 447-456, 1 pl. [*Hymenoptera*.]
467. —. Entomological notes on specimens received during 1899. T. c. pp. 639-651.

468. [FROGGATT, W. W.] Spider or lice flies that infest horses, sheep and other animals [in Australia]. T. c. pp. 1088-1094, pl. [*Diptera.*]
469. —. The growth of Economic entomology in Australia and its relation to Agriculture. Agric. Gaz. N. S. W. Federation number, pp. 131-138.
470. FROHAWK, F. W. Aberrations of British *Lepidoptera*. Entomologist xxxiii, pp. 101-103, pl. iii.
471. FRUHSTORFER, H. *Rhopalocera* Bazilana. Verzeichniss der von W. Doherty auf der Insel Bazilan gesammelten Tagfalter. Berlin. ent. Zeitschr. xlv, pp. 1-38.
472. —. Aufzählung der bekannten *Cethonia*-Arten. Ent. Zeit. Stettin li, pp. 364-381. [*Lepidoptera.*]
473. FUCHS, A. *Macrolepidopteren* der Loreley-Gegend und verwandte Formen. Siebente Besprechung. Jahrb. nassau. Ver. liii, pp. 29-67.
474. —. Vier neue *Pyraliden*-Formen aus der Loreley-Gegend. T. c. pp. 69-74. [*Lepidoptera.*]
475. FUENTE, —, DE LA. Datos para la fauna de la provincia de Ciudad-Real. Act. Soc. Espan. 1900, pp. 188-191. [*Coleoptera.*]
476. GADEAU DE KERVILLE, H. L'accouplement des *Coléoptères*. Bull. Soc. ent. France 1900, pp. 101-107.
477. —. Description, par M. l'Abbé J.-J. KIEFFER, d'un nouvelle espèce de *Diptère* marin de la famille des *Chironomides* (*Clunio bicolor*), et renseignements sur cette espèce, découverte par M. Henri Gadeau de Kerville dans l'Anse de St. Martin etc. Bull. Soc. Rouen Nov. 8th, 1900.
478. GAHAN, C. J. Stridulating organs in *Coleoptera*. Tr. ent. Soc. London 1900, pp. 433-452, pl. vii.
479. —. *Coleoptera* part [in] Monograph of Christmas island [cf. ANDREW (29)] pp. 89-127.
480. —. The expedition to Sokotra. Descriptions of the new *Coleoptera*. Bull. Liverp. Mus. iii, pp. 8-12.
481. —. Description of a new genus and species of Longicorn *Coleoptera* from central Formosa. Ann. Nat. Hist. v, pp. 308, 309.
482. —. On some Longicorn *Coleoptera* from the island of Hainan. T. c. pp. 347-354.  
— [See also PEEL (983).]
483. GALE, A. The Queen bee. Agric. Gaz. N. S. W. xi, pp. 28-31, 127-130, 204-206. [*Hymenoptera.*]
484. GALVAGNI, E. Beitrag zur *Lepidopterenfauna* des Brennergebietes. Verh. Ges. Wien I, pp. 561-576.
485. GANGLBAUER, L. Eine neue sibirische *Agapanthia*. Verh. Ges. Wien I, p. 139. [*Coleoptera.*]
486. —. Revision der europäisch-mediterranen Arten der Blinden *Bembidiinen*-Genera. T. c. pp. 151-184. [*Coleoptera.*]
487. —. Drei mitteleuropäische *Coleopteren*. T. c. pp. 259-261.
488. —. Zwei *Carabiden* von den lessinischen Alpen. T. c. pp. 576, 577. [*Coleoptera.*]  
— [See also BODEMEYER (131).]

489. GARBOWSKI, T. & DYBOWSKI, B. Neue Gesichtspunkte und Theorien auf dem Gebiete der vergl. Anatomie. Zool. Centrbl. vii, pp. 51-57.  
An account of the views published by DYBOWSKI in the Polish language in Kosmos Lemberg 1896 and 1897.
490. GAVOY, L. Catalogue des insectes *Coléoptères* trouvés jusqu'à ce jour dans le département de l'Aude. Troisième partie [*Pselaphida* to *Histerida*]. Bull. Soc. Aude xi, pp. 73-108.
491. GERMAIN, P. Apuntes sobre los Insectos de Chile. Monografía de los *Listroderidos*. An. Univ. Chile xcv, 1896. [*Coleoptera*.]  
I have seen only two of the fragments of which this work is made up. It includes apparently many new species, and at least one new genus of *Curculionida*.
492. GESTRO, R. Materiali per la conoscenza della fauna Eritrea raccolti dal Dott. Paolo Magretti. Un nuovo genere di *Rhysoपाussida*. Ann. Mus. Genova xl, pp. 743-748. [*Coleoptera*.]
493. —. A proposito di un articolo recente intorno alla fauna entomologica dell' Eritrea. T. c. pp. 723-736.  
A severe criticism of CANNAVIELLO (225).
494. —. Alcune osservazioni intorno al genere *Chalcosoma*. T. c. pp. 396-399. [*Coleoptera*.]
495. —. Gli *Anoftalmi* trovati finora nel Veneto. T. c. pp. 567-572. [*Coleoptera*.]
496. —. Materiali per lo studio delle *Hispida*. x. Alcune osservazioni ed aggiunte al catalogo delle *Hispida* di H. Donckier de Donceel. T. c. pp. 433-440. [*Coleoptera*.]
497. —. Materiali.... xi, xii. T. c. pp. 468-472. [*Coleoptera*.]
498. —. Materiali.... xiii, xiv. T. c. pp. 550-552. [*Coleoptera*.]
499. —. Catalogo sistematico dei *Paussidi*. T. c. pp. 811-850. [*Coleoptera*.]  
— [See also DORIA & GESTRO (347).]
500. GIARD, A. Sur le déterminisme de la métamorphose. C.R. Soc. Biol. lii, pp. 131-134.
501. —. La métamorphose est-elle une crise de maturité génitale? Bull. Soc. ent. France 1900, pp. 54-57.
502. —. Description d'une nouvelle espèce d'*Hyménoptère* (*Eupelmus xambeui*). T. c. p. 81.
503. —. Observations à propos des notes de MM. L. Bleuse et Ch. Oberthur. T. c. pp. 53, 54. [*Lepidoptera*.]  
Cf. BLEUSE (128) & GIARD (503).
504. —. Cils vibratiles et prolongements chez les Arthropodes. T. c. pp. 27, 28.  
— [See also MAINDRON (847).]
505. GIARDINA, A. Ein Beitrag zur Kenntnis des Genus *Machilis* Latr. Illustr. Zeitschr. Ent. v, pp. 209-211, 227-229, 242-245, 257-260. [*Thysanura*.]
506. \* —. Funzionamento dell' armatura genitale femminile e considerazioni intorno alle ooteche degli *Acridi*. Giorn. Soc. Palermo xxiii, 8 pp. [*Orthoptera*.]  
Summary, Illustr. Zeitschr. Ent. v, p. 372.

507. GIGLIO-TOS, E. Viaggio del Dr A. Borelli nel Matto Grosso e nel Paraguay. iv. *Ortotteri*. Boll. Mus. Torino xv, No. 377, 8 pp.
508. GILES, G. M. A handbook of the Gnats or Mosquitoes giving the anatomy and life history of the *Culicidæ*. London, 1900, 8vo, pp. viii & 374, illustrations. [*Diptera*.]
509. GILLANDERS, A. T. *Arboreal Aphidæ*. Tr. Manchester Micr. Soc. 1899, pp. 71-84, pls. v, vi.
510. GILLBARD, P. J. The silkworm: its life history and products. J. London Coll. Soc. vii, pp. 63-74. [*Lepidoptera*.]
511. GODMAN, F. D. *Biologia Centrali-Americana*, pts. CLIII-CLX.
- The following progress has been made during the year; 5 Vols., it will be noticed, have been brought to a state of completion.
- Coleoptera*, II, pt. 1, pp. 561-624, pl. xviii, *Cucujidæ* to *Cryptophagidæ*, by D. SHARP.
- Hymenoptera*, I, pp. 475-487, i-xii and Titlepage, completing the Vol. by P. CAMERON.
- Hymenoptera*, II, pp. 405-413, i-xi and Titlepage, completing the Vol. by P. CAMERON.
- Hymenoptera*, III, pp. 161-169, Index and Titlepage, completing the Vol. by A. FOREL.
- Lepidoptera Rhopalocera*, pp. 461-588, pls. xcii-c, *Hesperiidæ*, by F. D. GODMAN.
- Lepidoptera Heterocera*, I, pp. i-xxxii and Titlepage; II, pp. 593-622, Titlepage and Contents; III, Titlepage and Contents, completing the three Volumes, by H. DRUCE.
- Diptera*, I, pp. 217-248, *Stratiomyidæ*, supp. by S. W. WILLISTON.
- Diptera*, II, pp. 417-428, pl. xii, *Trypetidæ*, by F. M. VAN DER WULP.
- Rhynchota Heteroptera*, II, pp. 305-344, pls. xviii, xix, *Anthocoridæ* to *Saldidæ*, completing *Gymnocerata*, by G. C. CHAMPION.
- Rhynchota Homoptera*, I, pp. 41-43 by W. L. DISTANT, pp. 44-76, by W. W. FOWLER, pls. vii, viii, *Cicadidæ*, *Fulgoridæ*, *Flatidæ*.
- Rhynchota Homoptera*, II, pp. 265-292, pls. xviii, xix, *Jassidæ*, by W. W. FOWLER.
- Orthoptera*, I, by H. DE SAUSSURE, pp. i-x, Titlepage, completing the Vol. Reviewed by v. ADELUNG, Zool. Centrbl. pp. 58-61.
- Orthoptera*, II, by L. BRUNER & A. P. MORSE, pp. 1-16, *Acridiidæ*.
512. GORHAM, H. S. Descriptions of new genera and species of *Coleoptera* from South and West Africa, of the section *Serricornia*, and of the families *Erotylidæ*, *Endomychidæ* and *Languriidæ*. Ann. Nat. Hist. v, pp. 71-94.
513. —. Species of the subfamily *Languriidæ* contained in the Civic Museum of Genoa. Ann. Mus. Genova xl, pp. 354-368. [*Coleoptera*.]
514. GOUIN, H. Notes sur quelques variétés nouvelles ou intéressantes de *Lépidoptères* du département de la Gironde. Act. Soc. Bordeaux v, pp. 93-98, pls. iv, v.
515. GOUNELLE, E. Sur des bruits produits par deux espèces Americaines de fourmis et de termites. Bull. Soc. ent. France 1900, pp. 168, 169.
516. GRASSI, G. B. Die Uebertragung der Malaria durch Stechmücken der Gattung *Anopheles*. Verh. Ges. deutsch. Naturf. lxxi, 2 Theil, pp. 223-228.

517. [GRASSI, G. B.] Studi ulteriori sulla malaria. Atti Acc. Lincei Rend. ix (2) pp. 215-224. [*Diptera.*]  
Habits of *Anopheles*.
518. — & NOÉ, G. Propagazione delle filarie del sangue esclusivamente per mezzo della puntura di peculiari zanzare. T. c. pp. 157-162. [*Diptera.*]  
See also NOÉ, G. (945) for Part II.
519. — [and others]. Primo resconto sommario dell' esperimento contro la malaria fatto nei dintorni di Pesto. T. c. pp. 193-199. [*Diptera.*]
520. GREEN, E. E. Note on the web-spinning habits of the "red ant," *Oecophila smaragdina*. J. Bombay Soc. xiii, p. 181. [*Hymenoptera.*]
521. —. Descriptions of some species of *Coccidæ* collected by Mr James Lidgett in Victoria, Australia. Ann. Nat. Hist. vi, pp. 448-452, pl. xi.
522. —. Descriptions of new Victorian *Coccidæ*. Victorian Natural. xvii, pp. 9-14.  
With notes by Mr JAS. LIDGETT.
523. —. Supplementary notes on the *Coccidæ* of Ceylon. J. Bombay Soc. xiii, pp. 66-76, 252-257, pls. A-G.
524. —. Remarks on Indian Scale-insects (*Coccidæ*) with descriptions of new species. Ind. Mus. Notes v, pp. 1-13, pls. i, ii.
525. —. Description of a new species of *Ripersia* destructive to sugarcane. T. c. p. 37. [*Coccidæ.*]
526. —. Note on the attractive properties of certain larval *Hemiptera*. Ent. Mag. xxxvi, p. 185.
527. GROSE-SMITH, H. *Rhopalocera* exotica. Parts 51-54. [*Lepidoptera.*]
528. —. Description of a new species of *Papilio* from Bwool, North Celebes. Ann. Nat. Hist. vi, p. 210. [*Lepidoptera.*]
529. —. Description of a new species of *Ornithoptera*. T. c. p. 388. [*Lepidoptera.*]
530. —. Descriptions of new species of butterflies captured by Mr A. S. Meek, at Milne Bay, British New Guinea, in the Museum of the Hon. Walter Rothschild, at Tring. Nov. Zool. vii, pp. 86-89. [*Lepidoptera.*]
531. —. Descriptions of new African species of *Acraeinae*. T. c. pp. 544-547. [*Lepidoptera.*]
532. GROTE, A. R. The principle which underlies the changes in the neururation. Canad. Ent. xxxii, pp. 289-292 & 367. [*Lepidoptera.*]
533. —. Systema Lepidopterorum Hildesiae (Zweite Folge). Phylogenie und Begrenzung der Tagfalter Familien, hierzu Stammbaum und Tafel. Mt. Mus. Hildesheim xi, 10 pp.
534. —. Genealogical trees of butterflies. P. Amer. Phil. Soc. xxxviii, pp. 147-154. [*Lepidoptera.*]
535. —. Diphyletism in the *Lepidoptera*. Entomologist xxxiii, pp. 120-123.  
Cf. QUAIL (1063).

536. [GROTE, A. R.] The descent of the *Pierids*. P. Amer. Phil. Soc. xxxix, pp. 4-67, pls. i-iv. [*Lepidoptera*.]
537. —. Historical sketch of *Gortyna* and allied genera. T. c. pp. 346-357. [*Lepidoptera*.]
538. —. A new *Catocala* from Texas. Canad. Ent. xxxii, p. 191. [*Lepidoptera*.]
539. GROUVELLE, A. Insectes du Congo. *Claricornes*. Ann. Soc. ent. Belgique xlv, pp. 424, 425. [*Coleoptera*.]
540. — & LÉVEILLÉ, A. Contribution à l'étude de la faune entomologique de Sumatra (Voyage de M. J. L. Weyers). xii<sup>e</sup> Article. *Nidulida* etc. par A. GROUVELLE; *Trogositide* par A. LÉVEILLÉ. T. c. pp. 262-268. [*Coleoptera*.]
- [See also ABEILLE DE PERRIN & GROUVELLE (4).]
541. GRUM-GRSHIMAILO, G. *Lepidoptera nova vel parum cognita regionis palaearcticae*. I. Annuaire Mus. St. Petersb. iv, pp. 455-472.
542. GRUNER, M. Beiträge zur Frage des Aftersecretes der Schaumcicaden. Zool. Anz. xxxiii, pp. 431-436. [*Homoptera*.]
543. GUERCIO, G. DEL. Osservazioni intorno ad una nuova Cocciniglia nociva agli agrumi in Italia ed al modo di immunizzare la parte legnosa delle piante contro la puntura delle Cocciniglie in generale e di distruggerle. Bull. Soc. ent. Ital. xxxii, pp. 229-252, pl. iv. [*Coccidae*.]
- HAMMOND, A. R. [See MIALl & HAMMOND (907).]
544. HAMPSON, SIR G. F. Catalogue of the *Arctiadae* (*Nolinae*, *Lithosiinae*) in the collection of the British Museum. London, 1900, 8vo, xx & 589 pp., pls. xviii-xxiv.
- Forms Vol. II of Cat. *Lep. Phalaenae* Brit. Mus. Only *Nolinae* and *Lithosiinae* are dealt with. The plates are numbered consecutively to those of Vol. I and are published apart from the letterpress.
545. —. The moths of India. Supplementary paper to the volumes in "The fauna of British India." Series ii, Part I. J. Bombay Soc. xiii, pp. 37-51, pl. B. Part II, t. c. pp. 223-235; Part III, t. c. pp. 499-520. [*Lepidoptera*.]
546. —. New palaearctic *Pyralidae*. Tr. ent. Soc. London 1900, pp. 369-401, pl. iii. [*Lepidoptera*.]
547. —. *Lepidoptera Phalaenae* [in] Monograph of Christmas island [cf. ANDREWS (29)] pp. 63-74.
548. —. The moths of S. Africa. Part I. Ann. S. African Mus. ii, pp. 33-66. [*Lepidoptera*.]
549. —. On some teratological specimens of *Lepidoptera*. Ent. Mag. xxxvi, pp. 196, 197.
- [See also DUDGEON (352).]
550. HANCOCK, J. L. Synopsis of subfamilies and genera of North American *Tettigidae*. (Based upon the synoptical table of Prof. Bolivar.) Psyche ix, pp. 6, 7. [*Orthoptera*.]
551. —. A new *Tettigian* genus and species from South America. T. c. pp. 42, 43. [*Orthoptera*.]
552. —. Notes on species of the *Tettigian* group of *Orthoptera*. Canad. Ent. xxxii, pp. 25-27.

553. [HANCOCK, J. L.] Some new *Tettigidae* from Madagascar. Mem. Chicago ent. Soc. i, pp. 1-15, pl. i. [*Orthoptera*.]
554. HANDLIRSCH, A. Zur Kenntniss der Stridulationsorgane bei den *Rhynchoten*. Ein morphologisch-biologischer Beitrag. Ann. Hofmus. Wien xv, pp. 127-141, pl. vii.  
Summary by author, Zool. Centrbl. viii, pp. 28-30.
555. —. Neue Beiträge zur Kenntniss der Stridulationsorgane bei den *Rhynchoten*. Verh. Ges. Wien I, pp. 555-560.
556. —. Neue Arten der *Hymenopteren*-Gattung *Stizus* gesammelt von Dr H. Brauns in Südafrika. T. c. pp. 470-474.
557. —. *Stizus schmiedeknechtii*, n. sp., eine neue Grabwespe. T. c. p. 449. [*Hymenoptera*.]
558. —. Ein neuer Äthiopischer *Nysson*. T. c. pp. 510, 511. [*Hymenoptera*.]
559. —. Die Verwerthung überschüssiger Spermatozoen im Organismus weiblicher Insecten. Eine Besprechung der neuesten Arbeiten von A. Berlese. T. c. p. 105.
560. —. Ueber die sogenannten "Localfaunen" und speciell über Gabriel Strobl's "Steirische *Hemipteren*." T. c. pp. 512-516.
561. HANITSCH, R. An expedition to Mount Kina Balu, British North Borneo. J. Straits Asiat. Soc. No. 34, pp. 49-88, 4 pls.  
[Insects pp. 76-84.]
562. HANSEN, H. J. On the morphology and classification of the Auchenorrhynchos *Homoptera*. Entomologist xxxiii, pp. 116-120 etc.  
Translation by KIRKALDY, from Ent. Tidskr. xi, 1890.
563. HARRINGTON, W. H. Catalogue of Canadian *Proctotrypidæ*. Tr. R. Soc. Canada v, Sect. 4, pp. 169-206. [*Hymenoptera*.]
564. HARTMANN, F. Eine neue Gattung der *Oxyopisthinen* und eine neue Art der Gattung *Oxyopisthen*. Wien. ent. Zeit. xix, pp. 121-124. [*Coleoptera*.]
565. —. Zwei neue *Episomus* aus Sumatra. T. c. pp. 175, 176. [*Coleoptera*.]
566. —. Neue Rüsselkäfer aus Kaiser Wilhelms-Land. Deutsche ent. Zeitschr. 1900, pp. 273-295. [*Coleoptera*.]
567. HARVEY, F. L. [the late]. New Maine *Collembola*. Ent. News Philad. xi, pp. 549-553.
568. HAUSER, G. *Sambus prainæ* n. sp. Deutsche ent. Zeitschr. 1900, pp. 111, 112. [*Coleoptera*.]
569. —. *Alaomorphus candezei* novum genus et nova species *Elatridarum*. T. c. pp. 141, 144. [*Coleoptera*.]  
HAVENS, F. G. [See HOWARD (616).]
570. HAYWARD, R. A study of the species of *Tachys* of boreal America. Tr. Amer. ent. Soc. xxvi, pp. 191-238, pl. vi. [*Coleoptera*.]
571. HEATH, E. A. Description of a new *Cetoniid* beetle from East Africa. Ann. Nat. Hist. v, pp. 397-399. [*Coleoptera*.]
572. HEIDEMANN, O. Papers from the Harriman Alaska expedition. Entomological results (7): *Heteroptera*. P. Washington Ac. ii, pp. 503-506.



573. HELLER, K. M. Neue Käfer von Celebes. iv. Abh. Mus. Dresden ix, No. 5, 44 pp., 1 pl. [*Coleoptera.*]
574. —. Systematische Aufzählung der *Coleopteren*. Mit Neubeschreibungen von E. BRENSKE und J. FAUST. [In] SEMON Zoologische Forschungsreisen in Australien und dem malayischen Archipel. v, pp. 616–626.  
The Volume will also appear as Vol. VIII Denk. Ges. Jena.
575. —. Über die corsicanischen Varietäten der *Cetonia aurata* L. Ent. Nachr. xxvi, pp. 54–57. [*Coleoptera.*]  
HEMENWAY, H. D. [See HOWARD (616).]
576. HEMPEL, A. As *Coccidas* brazileiras. Revist. Mus. Paulista iv, pp. 365–537, pls. v–xii.  
131 species. The paper is entirely in the Portuguese language, but a translation into English is being given in Ann. Nat. Hist.
577. —. Descriptions of Brazilian *Coccidae*. Ann. Nat. Hist. vi, p. 389.  
Descriptions in English of the new species in (576).
578. —. Descriptions of three new species of *Coccidae* from Brazil. Canad. Ent. xxxii, pp. 3–7.
579. —. Notas sobre *Capulinia jaboticabae* Ihering. Revist. Mus. Paulista iii, pp. 51–61, pl. 1. [*Coccidae.*]
580. HENDEL, F. Untersuchungen über die europäischen Arten der Gattung *Tetanocera* im Sinne Schiner's. Verh. Ges. Wien I, pp. 319–358. [*Diptera.*]
581. —. Ueber eine neue *Sciomyza* aus dem österreichischen Litorale. Wien. ent. Zeit. xix, pp. 89–91. [*Diptera.*]
582. HENNEGUY, F. Le corps adipeux des *Muscides* pendant l'histolyse. C.R. Ac. Sci. cxxx, pp. 908–910.
583. HENNINGS, C. Die Mikrotom-Technik des Chitins. Zeitschr. wiss. Mikr. xvii, pp. 311–313.
584. HERZ, O. Meine *Lepidopteren*-Ausbeute im nördlichen Buchara und im Seravschan-Gebiete im Jahre 1892. Annuaire Mus. St. Petersb. v, pp. 428–457.
585. \*HESSE, P. Die Ausbreitung des Sandflohs in Afrika. Geogr. Zeitschr. 1899, pp. 522–530. [*Aphaniptera.*]  
Summary, Illustr. Zeitschr. Ent. v, p. 205.
586. HEYLAERTS, F. J. M. Remarques psychidologiques et descriptions de nouvelles espèces et variétés. Ann. Soc. ent. Belgique xlv, pp. 189, 190. [*Lepidoptera.*]
587. HEYMONS, R. Entwicklungsstadien von *Pulex gallinae* Bouché. Verh. Deutsch. zool. Ges. 1899, p. 289. [*Aphaniptera.*]
588. —. Eier, Embryonen und junge Larven von *Anisobasis litorea* White. T. c. pp. 289, 290. [*Orthoptera.*]
589. —. [Review of] Lameere; la raison d'être des métamorphoses chez les insectes. Zool. Centrbl. vii, pp. 327–329.
590. —. [Vibratile cilia.] T. c. pp. 499–501.  
A review of recent works: cf. BORDAS (148), GIARD (504).
591. —. [On] KNOWER [(738)] the embryology of a Termite. T. c. pp. 505–508. [*Neuroptera.*]

592. [HEYMONS, R.] Charles Janet, Essai sur la constitution morphologique de la tête de l'Insecte. T. c. pp. 800-804.  
Refers to JANET (658).
593. —. [On] FOLSOM, The development of the mouth-parts of *Anurida maritima*. Op. cit. viii, pp. 241-245.  
Criticism of FOLSOM's views (433) as to a superlingual segment.
594. HINE, J. S. Description of two new species of *Tabanidæ*. Canad. Ent. xxxii, pp. 247, 248. [*Diptera*.]
595. HOLLAND, W. J. The *Lepidoptera* of Buru. Part I. *Rhopalocera*. Nov. Zool. vii, pp. 54-86. Part II. *Heterocera*, t. c. pp. 555-591.
596. —. Alaskan Insects. Part I. Ent. News Philad. xi, pp. 381-389. Part II. T. c. pp. 416-423. [*Lepidoptera*.]
597. HOFMANN, O. Ueber die Naturgeschichte der *Eriocephaliden* und *Mikropterygiden*. Verh. Ges. deutsch. Naturf. lxxi, 2. 1, pp. 235-238. [*Lepidoptera*.]
598. \*HOLTERMANN, C. Commensalism of Termites and fungi. Festschr. f. Schwendener 1899, pp. 411-420. [*Neuroptera*.]  
Cf. J. R. Micr. Soc. 1900, p. 194.
599. HOPKINS, A. D. American fossil *Coleoptera* referred to *Scolytida*. Psyche ix, pp. 64-67.
600. HORN, W. De novis *Cicindelidarum* speciebus. Deutsche ent. Zeitschr. 1900, pp. 193-212. [*Coleoptera*.]
601. —. 7 neue *Cicindeliden*. T. c. pp. 361-365. [*Coleoptera*.]
602. —. De duabus novis generis *Tetrachæ* speciebus ex Ecuadoria. Ent. Nachr. xxvi, pp. 53, 54. [*Coleoptera*.]
603. —. Über einige U.S.A.-*Cicindeliden*. T. c. pp. 116, 117. [*Coleoptera*.]
604. —. Zum Studium der *Cicindeliden*. T. c. pp. 214-218. [*Coleoptera*.]
605. HORVÁTH, G. Species nova *Jassidarum* ex Hispania. Termes. Fuzetek xxiii, p. 128. [*Hemiptera-Homoptera*.]
606. —. Analecta ad cognitionem *Tesseratominorum*. T. c. pp. 339-374, pls. ix, x. [*Hemiptera-Heteroptera*.]
607. —. *Hemiptera* [In] Seimon R. zoologische Forschungsreisen in Australien und dem malayischen Archipel. v, pp. 629-642.  
This Vol. will also be Vol. VIII Denk. Ges. Jena.
608. — & MOCÁRY, A. Les espèces du genre *Troides* appartenant aux collections du Musée national Hongrois. Termes. Fuzetek xxiii, pp. 160-165, pls. i-iii. [*Lepidoptera*.]  
— [See also PASZLAWSZKY (981).]
609. HOUGH, G. DE N. Notes on some European species of *Calliphorinae*, *Muscinae muscaformes* and *Muscinae aricaformes* in the collection of the Hungarian national Museum. Termes. Fuzetek xxiii, pp. 248-250. [*Diptera*.]
610. HOULBERT, C. Faune analytique illustrée des *Orthoptères* de Fr. Feuill. Natural. xxx, pp. 93-101, etc., etc.

611. HOWARD, L. O. A contribution to the study of the insect fauna of human excrement (with especial reference to the spread of typhoid fever by flies). P. Washington Ac. ii, pp. 541-604, pls. xxx, xxxi. [*Diptera*.]
612. —. Notes on the mosquitoes of the United States: giving some account of their structure and biology with remarks on remedies. Bull. U. S. Dep. Agric. Ent. xxv, 70 pp. [*Diptera*.]
613. —. The differences between malarial and non-malarial mosquitoes. Scientific American lxxxiii, July 7, 1900, pp. 8, 9. Illustrations. [*Diptera*.]  
Attitude, larvæ, eggs, pupæ.
614. —. A new genus of *Aphelinine* from Chile. Canad. Ent. xxxii, pp. 167, 168. [*Hymenoptera*.]
615. —. Remarks on *Psorophora ciliata*, with notes on its early stages. T. c. pp. 353-357. [*Diptera*.]
616. —. Some miscellaneous results of the work of the division of Entomology. iv. Bull. U. S. Dep. Agric. Ent. xxii, 109 pp.

## Contents:—

- HOWARD, L. O. The two most abundant *Pulvinaria* on Maple, p. 7.
- . The insects to which the name "Kissing bug" became applied during the summer of 1899, p. 24.
- HUNTER, W. D. An investigation to determine whether *Melanoplus spretus* breeds permanently in the Turtle mountains in North Dakota, p. 30.
- CHITTENDEN, F. H. The bronze apple-tree weevil (*Magdalis ænescens*), p. 37.
- COQUILLETT, D. W. Two new Cecidomyiids destructive to buds of roses, p. 44.
- . A new violet pest (*Diplosis violicola*, n. sp.), p. 48.
- CHITTENDEN, F. H. Insects and the weather; observations during the season of 1899, p. 51.
- . Food plants and injury of N. American species of *Agrilus*, p. 64.
- HEMENAWAY, H. D. Experiments with hydrocyanic-acid gas as a means of exterminating mealy bugs and other insects in green-houses, p. 69.
- REH, L. Abstract of paper by, on Scale insects on American fruit imported into Germany, p. 79.
- HAVENS, F. G. Insect control in Riverside California, p. 83.
- BUSCK, A. Notes on a brief trip to Puerto Rico in January and February 1899, p. 88.
- General Notes, p. 93.
- Notes from correspondence, p. 107.
617. —. The principal insects affecting the tobacco plant. Farmers' Bull. No. 126, U.S. Dep. Agric. Ent. 1900, 32 pp.

618. HUBER, J. C. Bibliographie der klinischen Entomologie. (*Hexapoden, Acariden.*) Heft i. Inhalt *Sarcopsylla, Pulex, Acanthia, Pediculidae*. Jena 1899, 24 pp. [Heft ii, *Acarinen.*] Heft iii, *Muscidae, Oestridae*. Jena 1899, 25 pp. [Heft iv, *Acarinen.*] Jena 1900. Review, Zool. Centrbl. vii, p. 407.
619. HUBERT, R. Le mimétisme. Bull. Soc. Rouen xxxv, pp. 59-77.
620. HÜBNER, J. [deceased]. Exotische Schmetterlinge. Nebst Beiträge von C. Geyer. Nouvelle édition, revue, corrigée et augmentée, publiée sous la direction de W. F. Kirby, P. Wytsman. Bruxelles, 4to.  
Not dated. The plates are reproductions of those of Hübner. The letter-press is new and contains a few alterations of names. The plates have been in course of issue for some years. The issue of letter-press commenced in 1900 and pp. 1-32 have been issued dealing with *Rhopalocera*. There are three issues of the letter-press, in English, French and German.
621. HUDSON, G. V. Notes on *Macro-Lepidoptera* observed during the summer of 1898-99 [in New Zealand]. Tr. New Zealand Inst. xxxii, pp. 10-12.
622. HUEBER, T. Synopsis der deutschen Blindwanzen (*Hemiptera-Heteroptera*, Fam. *Capsidae*). v. Teil. Jahresh. Ver. Württemb. Ivi, pp. 407-469.
623. HULST, G. D. New species of *Lepidoptera*. J. N. York Ent. Soc. viii, pp. 215-225.
624. —. A new genus and species of *Phycitinae*. Canad. Ent. xxxii, pp. 13, 14. [*Lepidoptera*.]
625. —. Some new species of *Geometridae*. T. c. pp. 102-107. [*Lepidoptera*.]
626. —. Some new genera and species of *Phycitinae*. T. c. pp. 169-176. [*Lepidoptera*.]
627. —. Notes on some N. A. *Geometrina* and *Pyrallidina*. Ent. News Philad. xi, pp. 527-531, 554-558. [*Lepidoptera*.]  
— [See also DYAR (360).]
628. HUNTER, S. J. *Coccidae* of Kansas. III. Kansas Quart. ix, pp. 101-107, pls. xviii-xxiv.
629. — & SUTTON, W. S. The *Melanopli* of Kansas. Psyche ix, pp. 63, 64, 76, 77, 88-90. [*Orthoptera*.]
630. HUNTER, W. D. A catalogue of the *Diptera* of South America. Tr. Amer. ent. Soc. xxvi, pp. 260-291. Part I. Bibliography and *Nemocera*.  
— [See also HOWARD (616).]
631. HUTTON, F. W. The *Tipulidae* or Crane-flies of New Zealand. Tr. N. Zealand Inst. xxxii, pp. 22-51, pls. iii, iv. [*Diptera*.]
632. —. Notes on some New Zealand *Orthoptera*. T. c. pp. 19-21.
633. IHERING, H. VON. Fritz Mueller, Necrologio. Rev. Mus. Paulista iii, pp. 17-29, portrait.
634. ILLIDGE, R. Notes on the entomology of a tea-tree swamp. P. Soc. Queensland xv, pp. 1-3.

635. [ILLIDGE, R.] *Miscellanea entomologica: or odd notes on the history and transformations of various insects.* T. c. pp. 133-136. [*Lepidoptera.*]
636. IMHOF, O. E. *Multicelläres geflügeltes Insekt.* Biol. Centrbl. xx, p. 527.  
A new genus is proposed—*Polyocellaria*—though he does not decide to what order the Insect belongs.
637. —. *Punctaugen bei Tipuliden.* Zool. Anz. xxiii, p. 116. [*Diptera.*]  
Cf. MEIJERE, t. c. p. 200.
- JABLONOWSKI, J. [See PASZLAWSKY (981).]
638. JACOBS, J. C. *Diptères de la Belgique.* I. *Muscidae.* Ann. Soc. ent. Belgique xlv, pp. 192-212.  
An extensive list with localities and dates.
639. —. *Diptères.* Diagnoses d'insectes recueillis par l'expédition antarctique belge. T. c. pp. 106, 107.
640. JACOBSON, G. *De specie nova g. Lyperus Geoffr. e Caucaso.* Horæ Soc. ent. Ross. xxxii, pp. 141, 142. [*Coleoptera.*]
641. —. *Über die Flügeldeckenmakeln der Coccinelliden.* Op. cit. xxxiv, pp. vi-xii. [*Coleoptera.*]
642. —. *De genere novo Calosomatinatorum (Coleoptera, Curabidae).* Annuaire Mus. St. Petersb. v, pp. 261-265.
643. —. *Sur un cas interessant de mimicry entre les Coléoptères russes.* T. c. p. ix. [In Russian.]
644. JACOBY, M. *On new genera and species of phytophagous Coleoptera from South and Central Africa.* P. Zool. Soc. 1900, pp. 203-266, pl. xx.
645. —. *New species of Indian Phytophaga principally from Mandar in Bengal.* Mem. Soc. ent. Belgique vii, pp. 95-140. [*Coleoptera.*]
646. —. *Descriptions of some new species of Criocerini from the Malayan region.* Ent. Zeit. Stettin lxi, pp. 382-388. [*Coleoptera.*]
647. —. *Descriptions of new species and a new genus of South American Eumolpide, with remarks on some of the genera.* Tr. Ent. Soc. London 1900, pp. 453-510. [*Coleoptera.*]
648. —. *Descriptions of two new species of Hermesia (Chrysomelidae, fam. Eumolpidae).* Ann. Mus. Genova xl, pp. 351-353. [*Coleoptera.*]
649. JAKOWLEFF, B. E. *Description de deux nouvelles espèces de la famille des Lucanides.* Horæ Soc. ent. Ross. xxxiv, pp. 36-40. [*Coleoptera.*]
650. —. *Description de quelques espèces de la famille des Lucanides.* T. c. pp. 631-642. [*Coleoptera.*]
651. —. *Nouvelles espèces du genre Sphenoptera Sol.* T. c. pp. 96-107. [*Coleoptera.*]
652. —. *Étude sur les espèces du genre Sphenoptera Sol. appartenant au groupe de Sph. antiqua Illig.* T. c. pp. 199-206. [*Coleoptera.*]
653. —. *Études sur les espèces du genre Sphenoptera Sol. (Coleoptera, Buprestidae).* T. c. pp. 398-447 and 498-508.
654. —. *Nouvelles espèces du genre Dorcadion Dalm.* T. c. pp. 59-70. [*Coleoptera.*]

655. [JAKOWLEFF, B. E.] Quelques nouvelles espèces du sous-genre *Compsodorcadion* Ganglb. T. c. pp. 147-155. [*Coleoptera*.]
656. —. Notes hémiptérologiques. T. c. pp. 517-523.
657. —. Révision des *Cleroclytus* Kraatz (*Coleoptera*, *Cerambycidae*). T. c. pp. 656-665.
658. \*JANET, C. Essai sur la constitution morphologique de la tête de l'Insecte. Paris 1899, 74 pp., 7 pls.  
Review by HEYMONS, Zool. Centrbl. vii, pp. 800-804.
659. JANSON, O. E. List of the species of *Gnathocera* in the collection of the Royal Museum Brussels, with descriptions of two new species. Ann. Soc. ent. Belgique xlv, pp. 462-466. [*Coleoptera*.]
660. JAQUET, M. Faune de la Roumanie. Insectes récoltés par M. Jaquet en 1898 et déterminés par Monsieur le Professeur J. Kieffer à Bitsch. Ordre des *Hyménoptères*. Bull. Soc. Bucarest ix, pp. 143-149.  
Contains also a description by KONOW.
661. JOANNIS, J. DE. Description d'un *Microlépidoptère* nouveau, nuisible au Vanillier et provenant de l'île de la Réunion. Bull. Soc. ent. France 1900, pp. 262, 263.
662. —. Description de trois *Lépidoptères* de Cao-Bang (Tonkin). T. c. pp. 280, 281.
663. —. Description d'une nouvelle espèce de *Microlépidoptère* de France, *Zelleria ribesiella*. T. c. p. 391.
664. —. Note sur un *Phycide* vivant en parasite dans un nid de chenilles provenant de Mayomba (Congo). Bull. Mus. Paris 1900, pp. 280-283. [*Lepidoptera*.]
665. JOHNSON, C. W. New North American *Ortaliidae*. Canad. Ent. xxxii, pp. 246, 247. [*Diptera*.]
666. —. Some notes and descriptions of seven new species and one new genus of *Diptera*. Ent. News Philad. xi, pp. 323-328.
667. JOHNSON, W. G. The destructive green-pea louse. Canad. Ent. xxxii, pp. 56-60. [*Aphidae*.]
668. JORDAN, K. Einige Bemerkungen zu Herrn Prof. Grote's Systema *Lepidopterorum* Hildesiae. Ent. Nachr. xxvi, pp. 270-274.  
JUDULIEN, F. [See BRÈTHES, F. J. (183).]
669. \*KAEMPF, R. Studie über die Lebensweise der Wachsmotten. Leipzig. Bienenzeit. 1898, pp. 116, 117. [*Lepidoptera*.]  
Summary, Illustr. Zeitschr. Ent. v, p. 94.
670. KANE, W. F. DE VISMES. Catalogue of the *Lepidoptera* of Ireland: supplementary list. Entomologist xxxiii, pp. 328-333 [to be continued].
671. \*KANNENBERG, —. Eigenartige Ameisenwohnungen. Mt. Deutsch. Schutzg. xiii, Heft i.  
Cf. Illustr. Zeitschr. Ent. v, p. 139.
672. KARSCH, F. *Odonaten*. Ergebnisse einer zool. Forschungsreise in den Molukken und Borneo...ausgeführt von Dr Willy Kükenthal. Abh. Senckenb. Ges. xxv, pp. 211-230.  
This is apparently also to form part of Vol. iii, Heft i, of Kükenthal's results, as a publication apart from the Senckenb. Ges.

673. [KARSCH, F.] Zwei neue west-afrikanische *Psychiden*. Ent. Nachr. xxvi, pp. 1-3. [*Lepidoptera*.]
674. —. Eine west-afrikanische *Embiide*. T. c. p. 79. [*Neuroptera*.]
675. —. Ein neuer *Papilio* (*P. thurau*) aus Ostafrika. T. c. pp. 126-128. [*Lepidoptera*.]
676. —. Westafrikanische *Pyralididen*. I. T. c. pp. 244-252. II. T. c. pp. 372-378. [*Lepidoptera*.]
677. —. Vorarbeiten zu einer *Orthopterologie* Ostafrika's. II. Einige Gattungen Feldheuschrecken, *Acridodea*. T. c. pp. 274-287.
678. —. *Pirga weisei*, eine neue *Lepidoptere* (*Lymantriide*) aus Ostafrika. T. c. pp. 351, 352.
679. —. Drei neue *Lepidopteren* aus Ostafrika gesammelt von Herrn Stabsarzt Dr Fülleborn. T. c. pp. 353-359.
680. —. Vorläufige kurze Kennzeichnung von fünf neuen, durch Herrn A. Voeltzkow in West-Madagaskar entdeckten *Lepidopteren*. T. c. pp. 369, 370.
681. KATHARINER, L. Versuche über die Ursachen des "partiellen Albinismus" bei Schmetterlingen. Illustr. Zeitschr. Ent. v, pp. 321-323. [*Lepidoptera*.]
682. —. Versuche über den Einfluss der verschiedenen Strahlen des Spektrums auf Puppe und Falter von *V. urticae* L. und *V. io* L. T. c. pp. 361-364, 377-379, 1 pl. [*Lepidoptera*.]
683. KELLOGG, V. L. An extraordinary new maritime fly. Biol. Bull. i, pp. 81-87. [*Diptera*.]
684. —. Notes on the life-history and structure of *Blepharocera capitata* Loew. Ent. News Philad. xi, pp. 305-318. [*Diptera*.]
685. —. A new *Blepharocera*. Psyche ix, pp. 39, 40. [*Diptera*.]
686. — & KUWANA, S. I. *Mullophaga* from Alaskan birds. P. Ac. Philad. 1900, pp. 151-159, pl. vii.
687. KEMPERS, K. J. W. Het Adersysteem der Kevervleugels. Tijdschr. Ent. xliii, pp. 172-199, pls. x-xii. [*Coleoptera*.]
688. KEMPNY, P. Ueber die *Perliden*-Fauna Norwegens. Verh. Ges. Wien I, pp. 85-99. [*Neuroptera*.]
689. —. Beitrag zur *Perliden*- und *Trichopteren*-Fauna Sudtirols. T. c. pp. 254-258. [*Neuroptera*.]
690. KENNEL, J. Neue paläarktische *Tortriciden*, nebst Bemerkungen über einige bereits beschriebene Arten. Deutsche ent. Zeitschr. Lep. xiii, pp. 124-159. [*Lepidoptera*.]
691. KERREMANS, C. *Buprestides* nouveaux et remarques synonymiques. Ann. Soc. ent. Belgique xlv, pp. 282-351. [*Coleoptera*.]
692. —. Contribution à l'étude de la faune entomologique de Sumatra. Chasses de M. J. L. Weyers. vi. *Buprestides*. Mem. Soc. ent. Belgique vii, pp. 1-60. [*Coleoptera*.]
693. —. *Buprestides* Indo-malais. Troisième partie. T. c. pp. 61-93. [*Coleoptera*.]
694. —. Description de trois *Buprestides* nouveaux du Musée national Hongrois. Termes. Fuzotek xxiii, pp. 378-380. [*Coleoptera*.]

695. KERTÉSZ, K. Zehn neue *Sapromyza*-Arten aus Neu-Guinea und Ternate. Ann. Mus. Genova xl, pp. 369-373. [*Diptera*.]
696. —. Beiträge zur Kenntniss der Indo-australischen *Sapromyza*-Arten. Termes. Fuzetek xxiii, pp. 254-276. [*Diptera*.]
697. —. Übersicht der *Griphoneura*-Arten. T. c. pp. 395-399. [*Diptera*.]
698. —. Catalogus *Tabanidarum* orbis terrarum universi. Budapest, 1900, 8vo, 79 pp.  
Issued in connection with Termes. Fuzetek xxiii, with special pagination.
699. —. A sósvisek faunája Notacanthák átnézete. Potfuz. Termes. Kozl. xxxii, pp. 120-132. [*Diptera*.]
700. KIEFFER, J. J. *Cynipides*, in André, Species *Hym.*, Eur. Alg., Fascicules 69 and 72: viz. Tom. vii, pp. 433-592, pls. xix-xxiv. [*Hymenoptera*.]
701. —. Étude sur les *Évaniides*. Ann. Soc. ent. France lxxiii, pp. 813-820. [*Hymenoptera*.]
702. —. Description d'un *Aulax* nouveau. Bull. Soc. ent. France 1900, p. 339. [*Hymenoptera*.]
703. —. Ueber *Allotrinen*. Wien. ent. Zeit. xix, pp. 112-115. [*Hymenoptera*.]
704. —. Monographie des *Cécidomyides* d'Europe et d'Algérie. Ann. Soc. ent. France lxxix, pp. 181-384, pls. xv-xxiv. [*Diptera*.]
705. —. Synopse des *Cécidomyies* d'Europe et d'Algérie décrites jusqu'à ce jour (Novembre 1897). Bull. Soc. Metz. Cah. 20 (2nd Ser. viii), pp. 1-64. [*Diptera*.]
706. —. Observations sur le groupe *Chironomus* avec description de quelques espèces nouvelles. Ann. Soc. ent. France lxxiii, pp. 821-830. [*Diptera*.]
707. —. Beiträge zur Biologie und Morphologie der *Dipteren*. Illustr. Zeitschr. Ent. pp. 131-133 etc.
708. —. Über die Krallen und die Haftläppchen der *Dipteren*. T. c. pp. 337-340, pl.
709. — & TROTTER, A. Description d'une *Cécidomyie* nouvelle de Chine. Bull. Soc. ent. France 1900, pp. 233, 234. [*Diptera*.]  
— [See also GADEAU DE KERVILLE (477) and JAQUET (660).]
710. KINCAID, T. Papers from the Harriman Alaska expedition. Entomological results. (1) The *Tenthredinoidea*. P. Washington Ac. ii, pp. 341-365. [*Hymenoptera*.]  
The series includes also papers by BANKS, CAUDELL, COQUILLETT, DYAR, HEIDEMANN, HOWARD, FERGANDE & SCHWARZ; qq. v.
711. —....(2) The metamorphoses of some Alaska *Coleoptera*. T. c. pp. 367-388, pls. xxii-xxvi.
712. —....(6) The *Sphegoidea* and *Vespoidea*. T. c. pp. 507-510. [*Hymenoptera*.]
713. —. Notes on the species of *Crabro* found in the State of Washington. P. ent. Soc. Washington xi, pp. 353-359. [*Hymenoptera*.]



714. KING, G. B. A new *Pulvinaria* from New Mexico. *Canad. Ent.* xxxii, p. 360. [*Coccidæ*.]
715. —. The fifth species of *Kermes* from Massachusetts. *Psyche* ix, p. 22. [*Coccidæ*.]
716. —. The genus *Kermes* in North America. *T. c.* pp. 78-84. [*Coccidæ*.]
717. KIRBY, W. F. On a small collection of *Odonata* (dragon-flies) from Hainan, collected by the late John Whitehead. *Ann. Nat. Hist.* v, pp. 530-539, pl. xii.
718. —. On the species which have been included in *Zygonyx* Hagen and De Selys. *T. c.* pp. 539-542. [*Odonata*.]
719. —. Report on the *Neuroptera Odonata* collected by Mr E. E. Austen at Sierra Leone during August and September 1899. *Op. cit.* vi, pp. 67-79, pl. ii.
720. —. Notes on the collection of African *Phasgonuridæ* formed by Mr W. L. Distant in the Transvaal etc., with descriptions of two new species. *T. c.* pp. 211-217. [*Orthoptera*.]
721. —. Notes on the *Neuropterous* family *Nemopteridæ*. *T. c.* pp. 456-464.
722. —. Notes on some insects from the Yang-tse-kiang. *T. c.* pp. 380-382. [*Orthoptera*.]
723. —. The expedition to Sokotra. Description of the new *Hymenoptera*. *Bull. Liverp. Mus.* iii, pp. 13-24.
724. —. *Hymenoptera* [in] Monograph of Christmas Island. [Cf. ANDREW (29)], pp. 81-88.
725. —. *Hemiptera, Homoptera, Neuroptera, Orthoptera*. *T. c.* pp. 127-153, pls. xii-xv.  
— [See also DISTANT (320) and HÜBNER (620).]
726. KIRCHNER, O. & BOLTSCHAUER, H. Atlas der Krankheiten und Beschädigungen unserer landwirtschaftlichen Kulturpflanzen. v. Serie, Obstbäume. 30 plates and descriptive letter-press. 8vo, Stuttgart, 1899.  
This part is largely entomological. The work commenced in 1896; and there is some entomology in the previous parts.
727. KIRKALDY, G. Insectes du Congo. *Hydrocorises*. *Ann. Soc. ent. Belgique* xlv, pp. 431-435. [*Hemiptera-Heteroptera*.]
728. —. On some *Rhynchota*, principally from New Guinea (*Amphibicorisæ* and *Notonectidæ*). *Ann. Mus. Genova* xl, pp. 804-810.
729. —. On the nomenclature of the genera of the *Rhynchota, Heteroptera* and Auchenorrhynchous *Homoptera*. *Entomologist* xxxiii, pp. 25-28, 262-265.
730. —. Bibliographical and nomenclatorial notes on the *Rhynchota*. *T. c.* pp. 238-243.
731. —. Notes on Jamaican *Rhynchota*. No. 2. *T. c.* pp. 70-73.
732. —. On *Aegaleus bechuana*, a new species of *Cimicidæ*, reported to injure coffee-berries in British Central Africa. *T. c.* pp. 77-79. [*Hemiptera-Heteroptera*.]
733. —. Notes on some Sinhalese *Rhynchota*. *T. c.* pp. 293-295.

734. Klapálek, F. Beiträge zur Kenntniss der *Trichopteren*- und *Neuropteren*fauna von Bosnien und der Hercegovina. Wiss. Mitt. Bosnien vii, pp. 671-682, pl. xi.
735. Klemensiewicz, S. Merkwürdige Fühlerbildung bei einer *Zygaena* spec. Illustr. Zeitschr. Ent. v, p. 168.
736. \*Klinkhardt, V. Beiträge zur Morphologie und Morphogenie des männlichen Genitalapparates der *Rhopaloceren*. Leipzig, 1900, 32 pp. Summary by Escherich, Illustr. Zeitschr. Ent. v, p. 207.
737. \*Knotek, J. Zweiter Beitrag zur Biologie einiger Borkenkäfer aus dem Occupationsgebiete und den angrenzenden Ländern. Oesterreich. Vierteljahrsschr. Forstw. 1899, iii & iv Heft., 20 pp., cuts. [*Coleoptera*.]  
Summary, Zool. Centrbl. vii, p. 409.
738. Knower, H. McE. The embryology of a Termite, *Eutermes (riparitii?)*. J. Morphol. xvi, pp. 505-568, pls. xxix-xxxii.  
Includes discussion of some general questions as to origin of mesoderm and amnion of Insects. Cf. Heymons (591).
739. Kochi, Chujiro. The origin of the middle ocellus of the adult insect. (Preliminary communication.) Amer. Natural. xxxiv, pp. 641-643.
740. Kochs, J. Beiträge zur Einwirkung der Schildläuse auf das Pflanzengewebe. Mt. Mus. Hamburg xvii, Beiheft iii, pp. 279-294. [*Coccidae*.]  
Kohaut, R. [See Paszlavszky (981).]
741. Kohl, F. F. Zur Kenntnis neuer, gestachelter *Hymenopteren*. Ann. Hofmus. Wien xiv, pp. 305-316, pl. xix.
742. —. Zur Kenntniss der *Hymenopterengattung Eidopompilus* Kohl. Op. cit. xv, pp. 142-148, pl. viii.
743. Köhler, F. Die Duftscluppen der Gattung *Lycæna*, auf ihre Phylogenie hin untersucht. Zool. Jahrb. Syst. xiii, pp. 105-124, pls. xii-xiv. [*Lepidoptera*.]  
Summary, J. R. Micr. Soc. 1900, p. 578.
744. Kokujew, N. Symbolæ ad cognitionem *Braconidarum* imperii rossici et Asiæ centralis. II. Horæ Soc. Ent. Ross. xxxiv, pp. 24-35. [*Hymenoptera*.]
745. —. Symbolæ ad.....*Braconidarum*..... III. T. c. pp. 541-569.
746. —. Revisio specierum rossicarum ad *Ichneumonidarum* genus *Panicus* Grav. pertinentium. T. c. pp. 128-152. [*Hymenoptera*.]
747. Kolbe, H. J. Ueber einige Arten der *Dynastidengattung Heteronychus*. Ent. Nachr. xxvi, pp. 163-169. [*Coleoptera*.]
748. —. Über einige Arten der *Dynastiden*-Gattung *Heteronychus*. II. T. c. pp. 324-335. [*Coleoptera*.]
749. —. Über die Arten der eigenthümlichen *Neuropterengattung Nemoptera*. SB. Ges. naturf. Berlin 1900, pp. 10-18.
750. —. Ueber einige *Cerambyciden* aus Mhonda in Deutsch-Ost-Afrika. Berlin. ent. Zeitschr. xlv, pp. 297-308, pl. iv. [*Coleoptera*.]
751. —. Eine neue *Chalcosoma*-Art aus der Familie der *Dynast*. Ent. Nachr. xxvi, p. 52. [*Coleoptera*.]

752. [KOLBE, H. J.] Ueber einen neuen Rübenschädling vom Mittelrhein, *Ceuthorrhynchus ruebsaumeni* n. sp. nebst Bemerkungen über einige verwandte Arten. T. c. pp. 227–231. [*Coleoptera*.]
753. —. Über altersschwache Käfer. Illustr. Zeitschr. Ent. v, pp. 145, 146. [*Coleoptera*.]
754. KOLBE, W. Die Lebensgeschichte der *Hydrothassa hannoverana* Fabr. Zeitschr. Ent. Breslau xxv, pp. 19–23. [*Coleoptera*.]
755. KOLLMORGEN, F. Versuch einer *Macrolepidopteren*-Fauna von Corsica. Deutsche ent. Zeitschr. Lep. xii, pp. 307–328.
756. KONOW, F. W. Neuer Beitrag zur Synonymie der *Tenthredinide*. Wien. ent. Zeit. xix, pp. 101–112. [*Hymenoptera*.]
757. —. Neue Sibirische *Tenthrediniden*. Ent. Nachr. xxvi, pp. 119–125. [*Hymenoptera*.]  
 —. [See also JAQUET (660).]  
 KOPP, C. [See RUDOW (1142).]
758. KORB, M. *Epicimelia thesenæ* nov. spec. Deutsche ent. Zeitschr. Lep. xii, pp. 300–302. [*Lepidoptera*.]
759. KOSCHEVNIKOV, G. A. Über den Fettkörper und die Oenocyten der Honigbiene (*Apis mellifera* L.). Zool. Anz. xxiii, pp. 337–353.  
 Summary by HEYMONS, Zool. Centrbl. viii, pp. 172, 173.
760. KRAATZ, G. *Cymophorus rufithorax* n. sp. Deutsche ent. Zeitschr. 1900, p. 10. [*Coleoptera*.]
761. —. *Melanochæra* nov. gen. T. c. p. 11. [*Coleoptera*.]
762. —. Zwei neue *Trichius* aus Westafrika. T. c. p. 14. [*Coleoptera*.]
763. —. *Dilochrosis nigra*. T. c. p. 74. [*Coleoptera*.]
764. —. Einige neue *Cetoniden*-Arten. T. c. pp. 75, 76. [*Coleoptera*.]
765. —. Ueber die Gattung *Phonotenia* Kraatz. T. c. pp. 77, 78. [*Coleoptera*.]
766. —. *Cleriden* aus Ceylon gesammelt von Hrn. Dr. Horn. T. c. pp. 189–192. [*Coleoptera*.]
767. —. *Amblyopinus brandesi* n. sp. T. c. p. 212. [*Coleoptera*.]
768. —. *Fornasinius darcisi* Krtz. (neuer *Goliathide*). T. c. p. 220. [*Coleoptera*.]
769. —. *Ischnotarsia dimidiata* Krtz. T. c. p. 268. [*Coleoptera*.]
770. —. *Opilo nigerrimus* Krtz. T. c. p. 296. [*Coleoptera*.]
771. —. *Cælorrhina grandyi* Bates und *nyassica* Krtz. T. c. pp. 366, 367. [*Coleoptera*.]
772. —. *Fruhstorferia 6-maculata* Kraatz. T. c. pp. 367, 368. [*Coleoptera*.]
773. —. *Dilochrosis bennigseni* Kraatz, n. sp. T. c. p. 383. [*Coleoptera*.]
774. —. Einige neue Arten der Gattung *Pachnoda*. T. c. pp. 410–412. [*Coleoptera*.]
775. —. *Stenotarsia bimaculata* Krtz. T. c. p. 412. [*Coleoptera*.]
776. —. *Phonotænia fasciolata* n. sp. T. c. p. 413. [*Coleoptera*.]

777. [KRAATZ, G.] *Rhomborrhina mollenkampii* n. sp. T. c. pp. 415. [Coleoptera.]
778. —. *Eudicella hereroensis* n. sp. T. c. p. 416. [Coleoptera.]
779. —. Zwei neue *Phymatopteryx*-Arten. T. c. pp. 461–464. [Coleoptera.]
780. KRAUSS, H. Neue mediterrane *Staphylinoides* nebst Bemerkungen zu bekannten. Verh. Ges. Wien I, pp. 289–293. [Coleoptera.]
781. —. Beitrag zur Kenntniss der Käfer-Untergattung *Hypera* Germ. n. sp. (*Donus* Jekel). Wien. ent. Zeit. xix, pp. 189–205. [Coleoptera.]
782. —. Über ein eigenthümliches Organ bei der Feldheuschrecke *Pacilocerus socotranus* Burr. Zool. Anz. xxiii, pp. 155–157. [Orthoptera.]
- [See also DE BORMANS & KRAUSS (153).]
783. KREICHBAUMER, —. Von ihrer Königl. Hoheit der Prinzessin Therese von Bayern auf einer Reise in Südamerika gesammelte Insecten. I. *Hymenoptern*. Berlin. ent. Zeitschr. xlv, pp. 97–107, pl. i.
784. —. Neue Schlupfwespen (Fortsetzung). Ent. Nachr. xxvi, pp. 169–175. [Hymenoptera.]
785. \*KRÜGER, FRANK & KRÜGER, FRIEDR. Schildlausbuch. Beschreibung und Bekämpfung der für den deutschen Obst- und Weinbau wichtigsten Schildläuse. Berlin, 1900.  
Summary by KUHNGATZ, Biol. Centrbl. xx, pp. 316–319. Criticism by REH, t. c. pp. 493–496. Discussion continued, KUHNGATZ, t. c. p. 718.  
— [See also FRANK & KRÜGER (444).]
786. \*KRULIKOWSKY, A. Ueber die der Sonnenblume schädlichen Insecten. St. Petersburg. 1897, 14 pp.  
In Russian. Summary, Zool. Centrbl. viii, pp. 59–61.
787. KUHNGATZ, T. Eine neue *Plataspiden*-Gattung aus Deutsch-Ost-Afrika mit geweihartiger Verlängerung der Jugalbeule beim Männchen sowie über einige der nächsten Verwandten dieser neuen Gattung. SB. Ges. naturf. Berlin 1900, pp. 120–137. [Hemiptera-Heteroptera.]
788. \*KULWETZ, K. Zum Bau des Brustabschnitts des Blutgefäß- und Lymphsystems bei *Periplaneta orientalis*. Rabot. Lab. Warsaw 1898, pp. 87–101.  
In Russian. Summary by V. ADELUNG, Zool. Centrbl. vii, pp. 805, 806.
789. KÜNCKEL D'HERCULAIS, J. Les grands *Acridiens* migrateurs de l'ancien et du nouveau monde, du genre *Schistocerca*, et leurs changements de coloration suivant les âges et les saisons ; rôle physiologique des pigments. C.R. Ac. Sci. cxxxi, pp. 958–960. [Orthoptera.]
- KUTHY, D. [See PASZLAVSZKY (981).]
- KUWANA, S. I. [See KELLOGG & KUWANA (686).]
790. LAGERHEIM, G. Ueber *Lasius fuliginosus* (Latr.) und seine Pilzzucht. Ent. Tidskr. xxi, pp. 17–29. [Hymenoptera.]  
Summary, J. R. Micr. Soc. 1900, p. 577.
791. —. Zur Frage der Schutzmittel der Pflanzen gegen Raupenfrass. T. c. pp. 209–232.

792. LAJOYE, A. Catalogue des *Coléoptères* des environs de Reims. 2<sup>e</sup> édition. Reims, 8vo, 231 pp.  
Published in connection with Bull. Soc. Reims 1896 onwards, with separate pagination.
793. LAMEERE, A. Notes pour la classification des *Coléoptères*. Ann. Soc. ent. Belgique xliv.
794. —. Manuel de la faune de Belgique. Tome II. Insectes inférieurs. Bruxelles, 1900, 858 pp., 721 figg.
795. —. *Coléoptères. Cerambycidae*. Diagnoses d'insectes recueillis par l'expédition antarctique belge. Ann. Soc. ent. Belgique xliv, p. 112.
796. LAMPA, S. Löfskogsunnnan. (*Ocneria dispar* L.) Dess utvecklingsstadier, utbredning och lefnadssätt M. M. Ent. Tidskr. xxi, pp. 39-48, pl. i. [*Lepidoptera*.]
797. —. Berättelse till Kongl. landtbruksstyrelsen angående verksamheten vid Statens entomologiska anstalt, dess Tjänstemäns resor M. M. under år 1899. T. c. pp. 49-96.  
Notes on a large number of injurious insects.  
LANCASTER, A. [See McLACHLAN (878).]
798. LATHY, P. I. Three new species of *Nymphalinae* from Siam. Entomologist xxxiii, pp. 213, 214. [*Lepidoptera*.]
799. LAVERAN, —. Au sujet de la destruction des larves de moustiques par l'huile et le pétrole. C.R. Soc. Biol. lii, p. 48. [*Diptera*.]
800. —. Sur un *Anopheles* provenant de Madagascar. T. c. pp. 109, 110. [*Diptera*.]
801. —. Paludisme et moustiques; quelques faits recueillis dans le midi de la France et en Corse. T. c. pp. 987-989.
802. LEA, A. M. Revision of the Australian *Curculionidae* belonging to the subfamily *Cryptorhynchides*. Part IV. P. Linn. Soc. N. S. Wales xxiv, pp. 522-546. [*Coleoptera*.]
803. —. Descriptions of two new blind weevils from Western Australia and Tasmania. Op. cit. xxv, pp. 391-393. [*Coleoptera*.]
804. LÉCAILLON, A. Recherches sur la structure et le développement postembryonnaire de l'ovaire des Insectes. II. *Cimipodea staphylinus*. Bull. Soc. ent. France 1900, pp. 152-156. [*Thysanura*.]
805. —. Recherches... III. *Machilis maritima* Latr. T. c. pp. 205-207. [*Thysanura*.]
806. —. Recherches sur le développement postembryonnaire de l'ovaire des Insectes. 1<sup>o</sup>. *Culex pipiens* L. T. c. pp. 96-100.
807. LEECH, J. H. *Lepidoptera Heterocera* from Northern China, Japan and Corea. Part III. Tr. ent. Soc. London 1900, pp. 9-161. Part IV. T. c. pp. 511-663.
808. LEFEBVRE, M. J.-H. Fabre. Rev. Quest. Sci. xviii, pp. 543-565.  
An appreciation of Fabre; with an account of the 6th series of his Souvenirs.
809. LEFROY, H. M. Hints and suggestions for the treatment of the moth borer in sugar cane. Dep. Agric. West Indies 1900, 22 pp.
810. LÉGER, L. & DUBOSCQ, O. Notes biologiques sur les grillons. II. Cristalloïdes intranucléaires. Arch. zool. exp. Notes 1899, pp. xxxv-xxxviii. [*Orthoptera*.]

811. [LÉGER, L. & DUBOSCQ, O.] Notes biologiques sur les Grillons. iv. Sécrétion intestinale. Op. cit. 1900, pp. xlix-lvi.
812. —. Les Grégarines et l'épithélium intestinal. C.R. Ac. Sci. cxxx, pp. 1566-1568.
813. LEONARDI, G. Sistema delle "*Parlatoriæ*." Nota preventiva. Riv. Patol. Veg. viii, pp. 203-209. [*Coccidæ*.]
814. —. Saggio di sistematica degli *Aspidiotus* (Seguito). T. c. pp. 298-363. [*Coccidæ*.]
815. —. Storia naturale degli Acari Insetticoli. Bull. Soc. ent. Ital. xxxii, pp. 1-76.  
Includes a list of Insects with names of the mites found on them.
816. LESNE, P. Sur une espèce nouvelle de *Chrysomélide* appartenant au genre *Corynodes*. Bull. Mus. Paris 1900, pp. 18-20. [*Coleoptera*.]
817. —. Insectes du Congo. *Bostrychides*. Ann. Soc. ent. Belgique xliv, pp. 425-427. [*Coleoptera*.]
818. LÉVEILLÉ, A. Études sur la famille des *Temnochilides*. Ann. Soc. ent. France lxviii, pp. 644-657. [*Coleoptera*.]
819. —. Catalogus *Temnochilidum* (seu *Trogositidum*) inter annos 1758-1900 editorum. Op. cit. lxix, pp. 1-26. [*Coleoptera*.]  
— See also GROUVELLE & LÉVEILLÉ (540).
820. LEWIS, G. On new species of *Histeridæ* and notices of others. Ann. Nat. Hist. v, pp. 224-234 and 246-254. [*Coleoptera*.]
821. —. On new species of *Histeridæ* and notices of others. Op. cit. vi, pp. 265-290, pl. x. [*Coleoptera*.]  
— [See also ANDREWS (29).]
- LIDGETT, JAS. [See GREEN (521).]
822. LIE-PETTERSEN, O. J. Biologisches über norwegische *Collembola*. Bergens Mus. Aarbog 1899, No. 7, 12 pp.
823. —. Bidrag til Kundskaben om Vestlandets *Bombus*- og *Pnityrus*-arter. Op. cit. 1900, No. 3, 19 pp. [*Hymenoptera*.]
- LINTNER, J. A. (the late). [See FELT (406).]
824. LOCHHEAD, W. The San José and other scale insects prepared for the use of fruit growers and scale inspectors. Toronto, 1900, 48 pp., illustrations.
825. LORDE, R. *Cleridarum Catalogus*. Ent. Zeit. Stettin lxi, pp. 3-148. [*Coleoptera*.]
826. LOKAY, —. Eine neue *Leptusa* vom Altvater-Gebirge. Wien. ent. Zeit. xix, p. 77. [*Coleoptera*.]
827. \*LOWE, V. H. The Forest Tent-caterpillar. Bull. N. York exp. Stat. No. 159, pp. 33-60, pls. i-vi. [*Lepidoptera*.]  
Cf. Wien. ent. Zeit. xix, p. 84.
828. LOWER, O. B. Descriptions of new Australian *Lepidoptera*. P. Linn. Soc. N. S. Wales xxv, pp. 29-51.
829. —. Descriptions of new Australian *Lepidoptera*. T. c. pp. 403-423.
830. LUCAS, R. Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1897. *Allgemeines* (Insecta). Arch. Naturg. (2) 1900, pp. 1-68.

831. [LUCAS, R.] Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1898. Allgemeines (*Insecta*). Arch. Naturg. lxxv, 1899, Heft 2, pp. 1-100.
832. LUCAS, T. P. New species of Queensland *Lepidoptera*. P. Soc. Queensland xv, pp. 137-161.
833. LUCAS, W. J. Migrations of dragon-flies. Entomologist xxxiii, p. 210. [*Odonata*.]
834. —. British dragon-flies of the older English authors. T. c. pp. 41, 74, 174, 215, 259, 297, 338. [*Odonata*.]
835. —. The *Orthopterous* fauna of the British isles, Belgium, Holland. T. c. pp. 2-4.
836. \*LUDERS, L. Beitrag zur Kenntnis der *Lepidopteren*-Gattung. *Phyllocnistis*. Hamburg, 33 pp., 4 pls.  
1 n. sp. Cf. Illustr. Zeitschr. Ent. v, p. 300 and Berlin. ent. Zeitschr. xlv, p. 150.
837. LUDWIG, F. Über den Blumenbesuch der *Apiden* in Nordamerika nach den Beobachtungen von Charles Robertson. Illustr. Zeitschr. Ent. v, pp. 307-311.
838. LUNDBECK, W. *Diptera* groenlandica. Vid. Medd. 1900, pp. 281-316. Conclusion of, and supplement to article Zool. Rec. 1898, *Ins.* Titles (800).
839. LÜSTNER, G. Ueber eine neue Gallmücke des Weinstockes, *Clinodiplosis vitis* nov. spec. Ent. Nachr. xxvi, pp. 81-84, pl. [*Diptera*.]
840. LUZE, G. Revision der europäischen und sibirischen Arten der *Staphyliniden*-Gattung *Tachinus* Grav., nebst zwei Bestimmungstabellen. Verh. Ges. Wien I, pp. 475-508. [*Coleoptera*.]
841. LYELL, G. (Junior). Description of a new Australian butterfly, *Xenica tasmanica*. Victorian Natural. xvii, pp. 110-112, 1 pl. [*Lepidoptera*.]
842. MABILLE, L. Description de *Lépidoptères* de Madagascar. Bull. Mus. Paris 1899, pp. 373-375.
843. —. *Lepidoptera* nova malgassica et africana. Ann. Soc. ent. France lxxviii, pp. 723-753.  
It is not stated, in the case of many species, whether they are from Africa or Madagascar.
844. —. Description d'une *Hespéride* nouvelle. Bull. Soc. ent. France 1900, p. 230. [*Lepidoptera*.]
845. MACGILLIVRAY, A. D. *Tenthredo*—new species. Canad. Ent. xxxii, pp. 177-184. [*Hymenoptera*.]
846. MACKENZIE, VIVIAN ST. CLARE. The ant-hills at the Paris exhibition. Entomologist xxxiii, pp. 245, 246. [*Hymenoptera*.]
847. MAINDRON, M. A Monsieur le Professeur A. Giard. Ann. Soc. ent. France lxi, pp. 113-115.
848. —. Description d'une nouvelle espèce d'Insecte *Coléoptère* (*Calosoma grandidieri*) découverte dans le sud de Madagascar par M. Alfred Grandidier. Bull. Mus. Paris 1900, p. 16.
849. MALLÁSZ, J. A *Loxocarabus* alnemról. Potfuz. Termes. Kozl. xxxii, pp. 229-237. [*Coleoptera*.]

850. MANTERO, G. Nota sul genere *Spinaria* Brullé. Ann. Mus. Genova xl, pp. 542-545. [*Hymenoptera*.]
851. —. Viaggio di Lamberto Lorio nella Papuasias orientale. xxv. *Mutillidae* e *Scoliidae*. T. c. pp. 580-592. [*Hymenoptera*.]
852. MARCHAL, P. Sur un nouvel *Hyménoptère* aquatique, le *Limnodytes gerriphagus* n. gen., n. sp. Ann. Soc. ent. France lxi, pp. 171-176.
853. —. Le retour au nid chez le *Pompilus sericeus* V. d. L. C.R. Soc. Biol. lii, pp. 1113-1115. [*Hymenoptera*.]
854. —. Notes biologiques sur les *Chalcidiens* et *Proctotrypidés* obtenus par voie d'élevage pendant les années 1896, 1897 et 1898. Ann. Soc. ent. France lxi, pp. 102-112. [*Hymenoptera*.]
855. —. Sur les mœurs et le rôle utile de *Nabis lativentris* Boh. Bull. Soc. ent. France 1900, pp. 330-332. [*Hemiptera-Heteroptera*.]
856. MARLATT, C. L. *Aspidiotus diffinis*. Another scale Insect of probable European origin recently found in North America. Ent. News Philad. xi, pp. 425-427. [*Coccidae*.]
857. —. The European pear scale. *Diaspis piricola*. T. c. pp. 590-594. [*Coccidae*.]
858. MARSHALL, G. A. K. Mosquitos and malaria. Entomologist xxxiii, pp. 218-220.
859. —. Observations on Mimicry in South African insects. Rep. Brit. Ass. 1900, pp. 793-795.
860. —. Conscious protective resemblance. Zoologist 1900, pp. 536-549.  
Relates to DISTANT (320): has a supplement by POULTON (1053).
861. MARSHALL, T. A. *Braconides*, in André Spec. Hym. Eur. Alg. fasc. 71, viz. Tom. v bis, pp. 337-373 and 1\*-24\*. [*Hymenoptera*.]
862. —. Descriptions de *Braconides*. Bull. Mus. Paris 1899, p. 372. [*Hymenoptera*.]
863. MARTIN, J. Espèce nouvelle d'*Hémiptère* de la famille des *Pyrrhocoridae*. Bull. Mus. Paris 1900, p. 20.
864. MARTIN, J. O. A study of *Hydrometra lineata*. Canad. Ent. xxxii, pp. 70-76. [*Hemiptera-Heteroptera*.]
865. MARTIN, R. *Odonates* nouveaux ou peu connus. Bull. Mus. Paris 1900, pp. 103-108.  
MASON, P. B. [See MATTHEWS (870).]
866. MATSUMURA, S. Zwei neue von ihm gesammelte paläarktische *Jassiden*-Arten. SB. Ges. naturf. Berlin 1900, pp. 232-235. [*Hemiptera-Homoptera*.]
867. —. Neue japanische *Microlepidopteren*. Ent. Nachr. xxvi, pp. 193-199.
868. —. Uebersicht der *Fulgoriden* Japans. T. c. pp. 205-213 and 257-269. [*Hemiptera-Homoptera*.]
869. —. Die schädlichen *Lepidopteren* Japans. Illustr. Zeitschr. Ent. v, pp. 324-329, 342-347, 366-368, 379-382.



870. MATTHEWS, A. [the late]. *Trichopterygia illustrata et descripta*. Supplement. Edited by P. B. MASON. London, 1900, 4to, 114 pp., 7 pls. [*Coleoptera*.]
871. MAYER, A. G. On the development of color in moths and butterflies. Biol. Lect. Wood's Holl 1899, pp. 157-164.
872. —. On the mating instinct in moths. *Psyche* ix, pp. 15-20. [*Lepidoptera*.]
873. —. On the mating instinct in moths. *Ann. Nat. Hist.* v, pp. 183-190. [*Lepidoptera*.]  
Same as (872).
874. MAYER, P. *Arthropoda*. *Zool. Jahresber.* 1899, 60 pp.  
*Hexapoda*, pp. 39-60.
875. MAYR, G. Drei neue *Formiciden* aus Kamerun gesammelt von Herrn Prof. Dr Reinhold Buchholz. *Ent. Tidskr.* xxi, pp. 273-279. [*Hymenoptera*.]
876. McLACHLAN, R. A remarkable new mimetic species of *Mantispa* from Borneo. *Ent. Mag.* xxxvi, p. 127. [*Neuroptera*.]
877. —. Concerning *Teratopsocus maculipennis* Reuter, with notes on the brachypterous condition in females of *Psocidae*. *T. c.* pp. 6, 7. [*Neuroptera*.]
878. —. Abstract of an article by Mons. A. Lancaster on migrations of *Libellula quadrimaculata* in Belgium in June 1900. *T. c.* pp. 222-226.
879. M'CLUNG, C. E. The spermatocyte divisions of the *Acrididae*. *Kansas Quart.* ix, pp. 73-100, pls. xv-xvii. [*Orthoptera*.]
880. McNEIL, J. Variation in the venation of *Trimerotropis*. *Amer. Natural.* xxxiv, pp. 471-481. [*Orthoptera*.]
881. —. The *Orthopteran* genus *Trimerotropis*. *Psyche* ix, pp. 27-39.  
Table of species preliminary to a detailed paper in the press.
882. —. *Orchelimum* Serv. *Canad. Ent.* xxxii, pp. 77-83. [*Orthoptera*.]
883. MEERWARTH, H. Die Randstructur des letzten Hinterleibssegments von *Aspidiotus perniciosus* Comst. *Mt. Mus. Hamburg* xvii, 1899. 3 Beih., pp. 1-15, 1 pl. [*Coccidae*.]  
Summary in *Zool. Centrbl.* viii, p. 168.
884. MEIER, W. *Chrysomela sirentensis*. *Ent. Nachr.* xxvi, p. 78. [*Coleoptera*.]
885. —. *Timarcha schenklingi* n. sp. *T. c.* p. 161. [*Coleoptera*.]
886. MEIJERE, J. C. H. DE. Ueber die Larve von *Lonchoptera*. Ein Beitrag zur Kenntniss der cyclorrhaphen *Dipterenlarven*. *Zool. Jahrb. Syst.* xiv, pp. 87-132, pls. v-vii.
887. —. Ueber die Metamorphose von *Callomyia amoena* Meig. *Tijdschr. Ent.* xliii, pp. 223-231, pl. xiii. [*Diptera*.]
888. —. Matériaux pour l'étude des *Diptères* de la Belgique. *Ann. Soc. ent. Belgique* xlv, pp. 37-46.
889. MELANDER, A. L. A decade of *Dolichopodidae*. *Canad. Ent.* xxxii, pp. 134-144. [*Diptera*.]
890. — & BRUES, C. T. New species of *Hygroceleuthus* and *Dolichopus*, with remarks on *Hygroceleuthus*. *Biol. Bull.* i, pp. 123-148. [*Diptera*.]

891. MELICHAR, L. Beitrag zur Kenntniss der *Homopteren*-Fauna von Sibirien und Transbaikal. Wien. ent. Zeit. xix, pp. 33-45.
892. —. Eine neue Art der *Homopteren*-Gattung *Aphrophora*. T. c. pp. 58-60.
893. —. Ueber die *Homopteren*-Art *Rhytisylus pellucidus* Fieb. T. c. pp. 268-270.
894. MÉNÉGAUX, A. Sur la grasserie du ver à soie d'après le travail de Bolba. Bull. Sci. France Belgique xxxii, pp. 201-219.
895. —. Sur un curieux parasite du ver à soie (*Uginymia sericaria*, Rond.) d'après les recherches de SASAKI. T. c. pp. 333-340, pl. iv.
896. MERCER, W. F. The development of the wings in the *Lepidoptera*. J. N. York Ent. Soc. viii, pp. 1-20, pls. i-vi.
897. MERLIN, A. A. Note on the tracheal tubes of Insects etc. J. Quekett Club vii, pp. 405, 406.
898. MERRIFIELD, F. Experiments on the colour-susceptibility of the pupating larva of *Aporia crataegi*, and on the edibility of its pupa by birds. Ent. Mag. xxxvi, pp. 186, 187. [*Lepidoptera*.]
899. MESNIL, F. Quelques remarques au sujet du "determinisme de la métamorphose." C. R. Soc. Biol. lii, pp. 147-150.  
Presents some views of Metchnikoff.
900. MEUNIER, F. Études de quelques *Diptères* de l'ambre tertiaire. Bull. Soc. ent. France 1900, p. 111.
901. —. Sur des élytres de *Coléoptères* de la tourbe préglaciaire de Lauenberg. T. c. pp. 166, 167.
902. —. Sur quelques *Mymaridæ* du copal fossile. T. c. pp. 192-194. [*Hymenoptera*.]
903. —. Sur les *Mymaridæ* de l'ambre et du copal. T. c. pp. 364-367. [*Hymenoptera*.]
904. —. Sur quelques prétendus *Naucoris* fossiles du Musée de Munich. Miscell. ent. viii, pp. 12, 13. [*Hemiptera-Heteroptera*.]
905. —. Über die *Mycetophiliden* (*Sciophilinæ*) des Bernsteins. Illustr. Zeitschr. Ent. v, pp. 68-70. [*Diptera*.]  
MEYERE, —. [See MEIJERE.]
906. MEYRICK, E. New Hawaiian *Lepidoptera*. Ent. Mag. xxxvi, pp. 257, 258.
907. MIALL, L. C. & HAMMOND, A. R. The structure and life-history of the harlequin fly (*Chironomus*). Oxford, 1900, 8vo. vi & 196 pp., illustrations.
908. MICHAELIS, G. Bau und Entwicklung des männlichen Begattungsapparates der Honigbiene. Zeitschr. wiss. Zool. lxvii, pp. 439-460, pl. xxvi. [*Hymenoptera*.]  
Summary by HEYMONS, Zool. Centribl. vii, p. 814; Summary, J. R. Micr. Soc. 1900, p. 457.
909. MIK, J. *Dipterologische* Miscellen (2<sup>e</sup> serie) xiii. Wien. ent. Zeit. xix, pp. 18-21. xiv, t. c. pp. 71-76. (3<sup>e</sup> serie) i, t. c. pp. 143-162.
910. —. Ein neuer *Thinophilus* von Sardinien. T. c. pp. 79-  
[*Diptera*.]

911. [MIK, J.] Eine neue *Helomyza* aus Österreich. T. c. pp. 128-130. [*Diptera*.]  
MILLS, HELEN. [See SNOW & MILLS (1252).]
912. MINGAUD, G. *Coléoptères* nuisibles aux plantations de pins dans le Gard. Bull. Soc. Nîmes 1899, pp. xxxii, xxxiii.
913. MOCSÁRY, A. Ungarns *Neuroptern*. Termes. Fuzetek xxiii, pp. 109-116.  
Remarks suggested by the Fauna regni Hungariae.
914. —. *Siricidarum* species duae novae. T. c. pp. 126, 127. [*Hymenoptera*.]  
—, [See also PASZLAWSZKY (981).]
915. MOFFAT, J. A. Parasites in the eggs of *Chrysopa*. Rep. ent. Soc. Ontario 1900, pp. 51, 52. [*Neuroptera*.]
916. MOKRZECKI, S. Zur Biologie der *Oberea oculata* Linné var. *borys-thenica* nova. Horæ Soc. ent. Ross. xxxiv, pp. 294-299, pl. i. [*Coleoptera*.]
917. MONTANDON, A. L. Notes sur quelques *Hémiptères Hétero-ptères* et descriptions d'espèces nouvelles des collections du Musée civique de Gènes. Ann. Mus. Genova xl, pp. 531-541.
918. —. *Hemiptera-Heteroptera* espèces nouvelles de la faune pale-arctique. Bull. Soc. Bucarest. ix, pp. 155-160.
919. —. Sur les Insectes nuisibles en Roumanie. T. c. pp. 201-209.  
Chiefly general and elementary remarks.
920. —. *Hémiptères* exotiques nouveaux ou peu connus des collections du Musée national Hongrois. Termes. Fuzetek xxiii, pp. 414-422.
921. MONTGOMERY, T. H. Note on the genital organs of *Zuitha*. Amer. Natural. xxxiv, pp. 119-121. [*Hemiptera-Heteroptera*.]
922. —. On nucleolar structures of the hypodermal cells of the larva of *Carpocapsa*. Zool. Jahrb. Anat. xiii, pp. 385-392, pl. xxvii.  
Summary, J. R. Micr. Soc. 1900, p. 457.
923. MOORE, F. *Lepidoptera* indica. Parts XLIII to XLVIII, viz. vol. iv, pp. 137-260, pls. 333-378, completing the Volume.
924. MORDWILKO, A. Zur Biologie und Morphologie der Pflanzenläuse (fam. *Aphididae* Pass.). Horæ Soc. ent. Ross. xxxiii, pp. 1-84, 162-302.  
Entirely in Russian.
925. MORICE, F. D. A revised synoptic table of British *Chrysid*s. Ent. Mag. xxxvi, pp. 129-131. [*Hymenoptera*.]
926. —. Descriptions of new or doubtful species of the genus *Am-mophila* (Kirby) from Algeria. Ann. Nat. Hist. v, pp. 64-70. [*Hymenoptera*.]
927. \*MORITZ, J. Auftreten und Bekämpfung von Rebenkrankheiten (mit Ausnahme der Reblaus) im Deutschen Reiche im Jahre 1898. Mitt. Kais. Gesundheits-Amtes.  
Cf. Illustr. Zeitschr. Ent. v, p. 46.  
MORSE, A. P. [See GODMAN (511).]

928. MORTON, K. J. Descriptions of new species of oriental *Rhyacophila*. Tr. ent. Soc. London 1900, pp. 1-7, pl. i. [*Trichoptera*.]  
[MÜLLER, FRITZ. Obituary, see IHERING (633).]
929. MÜLLER, J. Ueber neue und bekannte *Histeriden*. Wien. ent. Zeit. xix, pp. 137-142. [*Coleoptera*.]
930. MUNRO, A. E. The Locust plague and its suppression. London, 1900, 8vo, xi & 365 pp., illustrations.
931. —. The locust plague and its suppression. Rep. Brit. Ass. 1900, pp. 797-799.
932. MURTFELDT, MARY E. New *Tineida*, with life-histories. Canad. Ent. xxxii, pp. 161-166. [*Lepidoptera*.]
933. — & WEED, C. M. Stories of Insect life. (2nd series), 1899, 72 pp.
934. NAVÁS, P. Algunas costumbres de las hormigas y hormigaleones. Act. Soc. Espan. 1900, pp. 218-222.
935. NEEDHAM, J. G. Insect drift on the shore of Lake Michigan. Mem. Chicago ent. Soc. i, pp. 19-26.
- 935A. —. The fruiting of the blue flag (*Iris versicolor*). Amer. Natural. xxxiv, pp. 361-386.
936. —. Some general features of the metamorphosis of the flag weevil *Mononychus vulpeculus* Fabr. Biol. Bull. i, pp. 179-191. [*Coleoptera*.]
- 936A. NETTER, A. Examen des mœurs des Abeilles au double point de vue des mathématiques et de la Physiologie expérimentale. C.R. Ac. Sci. cxxxi, pp. 976-978. [*Hymenoptera*.]  
Summary, J. R. Micr. Soc. 1901, p. 33.
937. NEWNHAM, F. B. A catalogue of the *Macro-Lepidoptera* found in the neighbourhood of Church Stretton. Church Stretton i, pp. 117-178.
938. NEWSTEAD, R. On a new scale-insect from Zomba, British Central Africa. P. Zool. Soc. London 1900, pp. 947, 948, pl. lix. [*Coccida*.]
939. —. The injurious scale insects and mealy bugs of the British isles. J. R. Hortic. Soc. xxiii, 1900, pt. 3, 44 pp. [*Coccida*.]  
Review, Ent. Mag. xxxvi, p. 245.
940. —. Observations on *Coccida* (No. 18). Ent. Mag. xxxvi, pp. 247-251.
941. —. General index to Miss Ormerod's twenty-two annual reports on injurious insects. London, 1900.  
He gives a preface on the chief points of interest in this series.
942. NICEVILLE, L. DE. On new and little-known *Lepidoptera* from the Oriental region. J. Bombay Soc. xiii, pp. 157-176, pls. cc, dd, ee.
943. NIELSEN, I. C. Biologiske Studier over Gravehvepse. Vid. Medd. 1900, pp. 255-280. [*Hymenoptera*.]  
Résumé in French, pp. 278-280.
944. \*NIEZABITOWSKI, E. Galizische Leichenfauna und deren Bedeutung des Zeitpunktes und des Ortes des Todes. Krakow, 1900, 86 pp.  
In Polish. Summary, Zool. Centrbl. viii, pp. 88, 89.
945. NOÉ, G. Una nuova specie di zanzara. Bull. Soc. ent. Ital. xxi, pp. 150-155, pl. i. [*Diptera*.]

946. [Noé, G.] Propagazione delle filarie del sangue esclusivamente per mezzo della puntura delle zanzare. II. Nota preliminare. Atti Acc. Lincei ix (2), pp. 357-362. [*Diptera*.]  
For Part I see GRASSI & Noé (518).  
— [See also GRASSI & Noé (518).]
947. NÜSSLIN, O. Zur Biologie der *Schizoneuriden*-Gattung *Mindarus* Koch. Biol. Centrbl. xx, pp. 479-485. [*Aphidæ*.]
948. \* —. Ueber eine Weisstannentrieblaus (*Mindarus abietinus* Koch). Allg. Forst-Jagdzeit. lxxv, 1899, pp. 210-214. [*Aphidæ*.]  
Summary by author, Zool. Centrbl. vii, p. 373.
949. \* —. Die Tannen-Wurzellaus. *Pemphigus* (*Holzneria*) *poschingeri*. T. c. pp. 402-408. [*Aphidæ*.]  
Summary by the author, Zool. Centrbl. vii, p. 374.
950. OBERTHÜR, C. Observations sur la faune anglaise comparée des *Lépidoptères* et leurs variations. 1<sup>re</sup> Partie *Rhopalocera*. Feuille Natural. xxxi, pp. 12-17, pls. iii, iv.
951. —. Anomalie de *Doleschallia amboinensis* Stgr. Bull. Soc. ent. France 1900, p. 53. [*Lepidoptera*.]  
Cf. GIARD, l. c.
952. —. Sur le *Biston hunii* Ch. Oberth., *Lépidoptère* hybride appartenant à la tribu des Phalénites. Bull. Soc. ent. France 1900, pp. 274-276, pl. i.
953. —. Aberrations de *Melitæa didyma* Ochs. et *Melitæa parthenie* Bks. T. c. pp. 276, 277, pl. i. [*Lepidoptera*.]
954. OHAUS, F. Revision der *Parastasiiden*. Deutsche ent. Zeitschr. 1900, pp. 225-266. [*Coleoptera*.]
955. —. Verzeichniss der von Herrn Dr W. Horn auf Ceylon gesammelten *Ruteliden*. Ent. Zeit. Stettin lxi, pp. 362, 363. [*Coleoptera*.]
956. —. Bericht über eine entomologische Reise nach Centralbrasilien. Op. cit. lx, pp. 204-245 and lxi, pp. 149-191, 193-274.
957. OLIVIER, E. Voyage de M. E. Simon au Venezuela (décembre 1887-aôût 1888). 30<sup>e</sup> Mémoire. *Lampyrides*. Ann. Soc. ent. France lxi, pp. 62-65. [*Coleoptera*.]
958. —. Contribution à l'étude de la faune entomologique de Sumatra. (Voyage de M. J. L. Weyers.) xi. *Lampyrides*. Ann. Soc. ent. Belgique xlv, pp. 234-238. [*Coleoptera*.]
959. —. Descriptions de deux nouvelles espèces de *Lampyrides*. Bull. Soc. ent. France 1900, p. 47. [*Coleoptera*.]
960. —. Description d'un *Lampyride* nouveau de Borneo. T. c. p. 285. [*Coleoptera*.]
961. —. Les *Lampyrides* typiques du Muséum. Bull. Mus. Paris 1899, pp. 371, 372. [*Coleoptera*.]
962. OLSOUFIEW, —. Notes sur les *Onthophagides*. I. Annuaire Mus. St. Petersb. v, pp. 266-275. [*Coleoptera*.]
963. ORBIGNY, H. D'. Supplément au Synopsis des *Onthophagides* paléarctiques. Abeille xxix, pp. 289-300. [*Coleoptera*.]

964. ORMEROD, E. A. Report of injurious insects and common farm pests during the year 1900 with methods of prevention and remedy. 24th Report, 2nd Series, No. 2. London, 1901, 111 pp.  
For index to this series of reports see NEWSTEAD (941).
965. —. Flies injurious to stock, being life-histories and means of prevention of a few kinds commonly injurious with special observations on ox warble or bot-fly. London, 1900, 8vo, vi & 80 pp. [*Diptera.*]  
Cf. Nature lxxiii, p. 127.
967. OSBORN, H. The genus *Scaphoideus*. J. Cincinnati Soc. xix, pp. 187-209, pls. ix, x. [*Hemiptera-Homoptera.*]
968. —. Description of a new species of *Hamatopinus*. Canad. Ent. xxxii, p. 215. [*Anoptura.*]
969. —. Two new species of *Jassida*. T. c. p. 285. [*Hemiptera-Homoptera.*]
970. —. A new species of *Eutettix*. Ent. News Philad. xi, pp. 395, 396. [*Hemiptera-Homoptera.*]
971. —. A neglected *Platymetopius*. T. c. p. 501. [*Hemiptera-Homoptera.*]
972. OSTEN SACKEN, C. R. Notiz über die Erstlingsarbeit von C. Duméril über entomologische Classification, mit besonderer Rücksicht auf die Gattung *Tetanocera*. Verh. Ges. Wien I, pp. 450, 451. [*Diptera.*]
973. \*OTTAVI, E. La fillosera in Italia. Stato dell' infezione alla fine del 1898. Come si limita e si combatte e quanto si spende. Boll. Ent. Agrar. 1899, Heft vii.  
Summary, Illustr. Zeitschr. Ent. v, p. 124.  
OTTOLENGUI, R. [See DYAR (360).]
974. PAGENSTECHER, A. Über die geographische Verbreitung der Tagfalter im malayischen Archipel. Jahrb. nassau. Ver. liii, pp. 85-200. [*Lepidoptera.*]
975. —. Die *Lepidopteren* Fauna des Bismarck-Archipels. Mit Berücksichtigung der thiergeographischen und biologischen Verhältnisse systematisch dargestellt. Erster Theil: die Tagfalter. Zoologica Heft xxvii, 1899, 160 pp., 2 pls.  
Nachträge. Op. cit. xxix, pp. 261-268.
976. —. .... Teil II. Die Nachtfalter. Op. cit. xxix, 268 pp., 2 pls. [*Lepidoptera.*]  
Cf. SNELLEN (1248).
977. PANDELLÉ, L. Études sur les *Muscides* de France. (3<sup>e</sup> partie, suite), pp. 221-292.  
Published in connection with Rev. Ent. franc. xix.
978. PANTEL, J. Sur le vaisseau dorsal des larves des *Tachinaires*. Bull. Soc. ent. France 1900, p. 258. [*Diptera.*]
979. PAULCKE, W. Ueber die Differenzirung der Zellelemente im Ovarium der Bienenkönigin (*Apis mellifica*). Zool. Jahrb. Anat. xiv, pp. 178-202, pls. xii, xiii.

980. PAULMIER, F. C. The spermatogenesis of *Anasa tristis*. J. Morphol. xv, Suppl. pp. 223-272, pls. xiii, xiv. [*Hemiptera-Heteroptera*.]  
 PAVÉL, J. [See PASZLAWSZKY (981).]
981. PASZLAWSZKY, J. Fauna regni Hungariae Animalium Hungariae hucusque cognitorum enumeratio systematica. III. *Arthropoda*. In memoriam regni Hungariae mille abhinc annis constituti, edidit regia societas scientiarum naturalium hungarica. Budapest, 1900.  
 There is no Index or table of contents, and each of the great Orders of Insects is separately paged. *Orthoptera* by J. PUNGUR, pp. 11-16. *Thysanoptera* by J. JABLONOWSKI, 2 pp. *Apterygogenea* by E. VELLAY, pp. 19-22. *Pseudoneuroptera* by A. MOCSÁRY, pp. 23-32. *Neuroptera* by A. MOCSÁRY, pp. 33-44. *Coleoptera* by D. KUTHY, pp. 5-214. *Hymenoptera* by A. MOCSÁRY, pp. 8-113. *Lepidoptera* by L. ABAFI-ATIGNER, J. PÁVEL, F. UHRYK, pp. 5-82. *Diptera* by J. THALHAMMER, pp. 5-76. *Hemiptera* by G. HORVATH, pp. 5-72. *Aptera* by R. KOHAUT, 3 pp.
982. PECKHAM, G. W. & PECKHAM, E. G. Instinct or reason? Amer. Natural. xxxiv, pp. 817, 818. [*Hymenoptera*.]
983. PEEL, C. V. A. On a collection of Insects and Arachnids made in 1895 and 1897, by Mr C. V. A. Peel, F.Z.S., in Somaliland, with descriptions of new species. By C. V. A. PEEL, E. E. AUSTEN, F. A. DIXEY, HERBERT DRUCE, C. J. GAHAN, G. J. ARROW, R. McLACHLAN, M. BURR, and R. I. Pocock. P. Zool. Soc. London 1900, pp. 4-63, pls. i-iv.  
 There are also descriptions by BRUNNER, v. WATTENWYL and Mrs THOMAS.
984. \*PEIPER, E. Fliegenlarven als gelegentliche Parasiten des Menschen. Berlin, 1900, 12 mo., 76 pp., 41 cuts. [*Diptera*.]  
 Summary, Zool. Centrbl. vii, p. 807.
985. PEREZ, C. Sur l'histolyse musculaire chez les insectes. C.R. Soc. Biol. lii, pp. 7, 8.
986. PERGANDE, T. A new species of plant-louse injurious to violets. Canad. Ent. xxxii, pp. 29, 30. [*Aphidae*.]
987. —. Papers from the Harriman Alaska expedition. Entomological results (10): *Aphididae*. P. Washington Ac. ii, pp. 513-517.
988. —. ....(11): *Formicidae*. T. c. pp. 518-521. [*Hymenoptera*.]
989. PÉRINGUEY, L. Notes sur certaines *Cétoines* (*Crémastochilides*) rencontrées dans des fourmilières ou termitières avec description d'espèces nouvelles. Ann. Soc. ent. France lxi, pp. 66-72. [*Coleoptera*.]
990. PERKINS, R. C. L. *Coleoptera*, *Rhynchophora*, *Proterhinidae*, *Heteromera* and *Cioide* [in] Fauna Hawaiiensis ii, pp. 117-270, pls. vii-x.
991. —. *Protopsis palustris* sp. nov., an addition to the British *Hymenoptera*. Ent. Mag. xxxvi, pp. 49, 50.
992. \*PERRONCITO, E. Le larve della *Sarcophila magnifica* Schiner nell'intestino dell'uomo. Giorn. Acc. med. Torino lxiii, pp. 522-525, pl. Cf. Monit. Zool. ital. xi, p. 281.
993. PETERSEN, W. Beiträge zur Morphologie der *Lepidopteren*. Mem. Ac. St. Petersburg. (8) ix, No. 6, 144 pp., 4 pls.  
 Summary by REBEL, Verh. Ges. Wien I, pp. 456-458.
994. PETRUNKEWITSCH, A. Die Verdauungsorgane von *Periplaneta orientalis* und *Blatta germanica*. Histologische und physiologische Studien. Zool. Jahrb. Anat. xiii, pp. 171-190, pl. xi. [*Orthoptera*.]

995. PEYERIMHOFF, P. DE. Description de deux nouveaux *Staphylinidæ*. Bull. Soc. ent. France 1900, pp. 8, 9. [*Coleoptera*.]
996. —. Description d'un nouvel *Histéride* fouisseur de Biskra. T. c. p. 202. [*Coleoptera*.]
997. —. Sur l'application de la loi phylogénique de Brauer. T. c. pp. 219-223. [*Coleoptera*.]
998. —. Sur la valeur phylogénique et le nombre primitif des tubes de Malpighi chez les *Coléoptères*. T. c. pp. 295-298.
999. PIC, M. Matériaux pour servir à l'étude des Longicornes. 3<sup>me</sup> cahier. Lyon, 1900, iv, 17 & 10 pp. [*Coleoptera*.]
1000. —. *Hylophilidæ*, *Anthicidæ* et *Pedilidæ* de l'île de Sumatra. Ann. Soc. ent. France lxxviii, pp. 754-760. [*Coleoptera*.]
1001. —. *Anthicidæ* de l'Erythrée. Ann. Mus. Genova xl, p. 575. [*Coleoptera*.]
1002. —. Diagnoses de *Macratrîa* de la Nouvelle Guinée. T. c. pp. 597-601. [*Coleoptera*.]
1003. —. Diagnoses d'*Anthicidæ* de la Nouvelle Guinée. T. c. pp. 602-608. [*Coleoptera*.]
1004. —. *Hylophilidæ* de la Malaisie et nouveau genre d'*Anthicidæ* de Sumatra. T. c. pp. 737-742. [*Coleoptera*.]
1005. —. Diagnoses de *Macratrîa* et d'*Anthicidæ* de la Malaisie. T. c. pp. 791-803. [*Coleoptera*.]
1006. —. Description du *Bruchus scapularis* (Reiche) du Brésil. Bull. Soc. ent. France 1900, p. 29. [*Coleoptera*.]
1007. —. Description de trois *Pinus* d'Orient. T. c. pp. 48, 49. [*Coleoptera*.]
1008. —. Description d'un *Ocladius* nouveau d'Abyssinie. T. c. p. 108. [*Coleoptera*.]
1009. —. Descriptions et habitats nouveaux de divers *Coléoptères* d'Algérie et d'Orient. T. c. pp. 123-125.
1010. —. Contribution à l'étude des *Coléoptères* de la Tripolitaine et de la Tunisie. T. c. pp. 164-166.
1011. —. Description d'un *Otiorrhynchus* nouveau du nord de l'Afrique. T. c. p. 316. [*Coleoptera*.]
1012. —. Notes sur les *Bythinus* Leach, de Tunisie et description d'une espèce nouvelle. T. c. pp. 403, 404. [*Coleoptera*.]
1013. —. Diagnosen verschiedener *Phytosciæ* aus dem Orient. Ent. Nachr. xxvi, p. 67. [*Coleoptera*.]
1014. —. Neue *Pedilidæ* und *Anthicidæ*. Verh. Ges. Wien l, pp. 138, 139. [*Coleoptera*.]
1015. —. Contribution à l'étude des *Cerambycidæ* de Chine et du Japon. Ann. Soc. ent. Belgique xlv, pp. 16-19. [*Coleoptera*.]
1016. —. Contribution à l'étude des *Pinidæ* de l'Amérique centrale et meridionale. T. c. p. 251-258. [*Coleoptera*.]
1017. —. *Anthicidæ* du Congo des collections du Musée royal d'histoire naturelle de Belgique. T. c. pp. 428-431. [*Coleoptera*.]



1018. [PIC, M.] Diagnoses de *Coléoptères* américains et asiatiques. *Naturaliste* xxii, p. 57.
1019. —. Description de *Coléoptères*. T. c. p. 68.
1020. —. Description de *Coléoptères*. Deux *Plinus* nouveaux du Brésil. T. c. p. 211.
1021. —. Description de *Coléoptères* circuméditerranéens et exotiques. *Echange* xvi, pp. 19, 20.  
No indication of whether they are new, or are species or varieties.
1022. —. Diagnoses de divers "*Anthicidae*" et d'un "*Entypodera*" de l'Afrique orientale. T. c. p. 34. [*Coleoptera*.]
1023. —. Notes sur divers *Coléoptères*. T. c. pp. 37, 38.
1024. —. Descriptions de *Coléoptères* algériens et tunisiens. T. c. pp. 53-56.
1025. —. Notes et diagnoses. T. c. pp. 61-63. [*Coleoptera*.]
1026. —. Notes et diagnoses. 2<sup>e</sup> article. T. c. pp. 77-80. [*Coleoptera*.]
1027. —. Sur le genre "*Cryptocephalus*" Geoff. T. c. pp. 66-70. [*Coleoptera*.]
1028. —. "*Hypurus optime-maculatus*" n. sp. T. c. p. 70. [*Coleoptera*.]
1029. —. Contribution à l'étude des *Longicornes*. T. c. p. 81-83. [*Coleoptera*.]
1030. —. Diagnoses de *Malacodermes* et d'un *Cryptocephalus*. T. c. pp. 85-88. [*Coleoptera*.]  
It is not said whether they are new or not.
1031. —. Diagnoses de *Coléoptères* du globe. T. c. pp. 89-91.
1032. —. Neue *Coleopteren* des Hamburger Museums. Mt. Mus. Hamburg xvii, Beiheft ii, pp. 9, 10.
1033. —. Notes diverses sur les *Coléoptères*. Frelon viii, pp. 1-8, separate pagination.
1034. —. Contribution à l'étude des *Coléoptères* d'Europe et des régions voisines. Bull. Soc. zool. France xxv, pp. 14-16.
1035. —. Contribution à l'étude des *Notoxus* (*Coléoptères*) d'Europe et des régions avoisinantes. Feuille Natural. xxx, pp. 64-68 and 89-91.
1036. \* —. Rectifications et renseignements entomologiques. Lyon, 1898.  
Noticed in Frelon viii, sep. pag. p. 1.
1037. PIEPERS, M. C. The evolution of colour in *Lepidoptera*. Notes Leyden Mus. xxii, pp. 1-24.
1038. — et SNELLEN, P. C. T. Enumeration des *Lepidoptères* Hétérocères recueillis à Java par Mr M. C. Piepers avec des notes par Mr P. C. T. Snellen. Tijdschr. Ent. xliii, pp. 12-108, pls. i-iv.
1039. PLANET, L. Essai monographique sur les *Coléoptères* du genres *Pseudolucane* et *Lucane*. *Naturaliste* xxii, pp. 47, 96, 108. [*Coleoptera*.]
1040. —. Description d'un *Coléoptère* nouveau. T. c. p. 11.

1041. PLATEAU, F. Nouvelles recherches sur les rapports entre les insectes et les fleurs. Troisième partie. Les *Syrphides* admirent-ils les couleurs des fleurs? Mem. Soc. zool. France xiii, pp. 266-285. [*Diptera*.]
1042. —. Expériences sur l'attraction des insectes par les étoffes colorées et les objets brillants. Ann. Soc. ent. Belgique xliv, pp. 174-188.
1043. —. Rapport... Bull. Ac. Belgique 1899, pp. 760-769. [*Aptera*.]  
Account of a memoir by WILLEM to be published elsewhere.
1044. —. Un cas probable de mimétisme défensif. Naturaliste xxii, pp. 70, 71. [*Hemiptera-Heteroptera*.]
1045. \*POGIBKO, A. J. Über die Bekämpfung der Feldhauschrecken im Gouv. Irkutsk vermittelst des Schweinfurter Grüns im Jahre 1899. St Petersburg 1899, 20 pp.  
In Russian. Summary Zool. Centrbl. viii, p. 63.
1046. PONSELLE, A. Contribution à l'étude des mœurs des *Cicindèles*. Feuille Natural. xxxi, pp. 67, 68. [*Coleoptera*.]
- PORRITT, G. T. [See BUCKLER (191).]
1047. PORTA, A. La *Viviana pacta* (Mgn.) Rond. parassita dello *Zabrus tenebrioides* Goeze (*gibbus* F.). Atti Soc. Modena xxxiii, pp. 39, 40. [*Diptera*.]
1048. PORTCHINSKY, J. Sur les espèces du genre *Perissocerus* des environs d'Ashabad. Horæ Soc. ent. Ross. xxxiii, pp. 143-146. [*Diptera*.]
1049. \* —. Die Bremsen (*Tabanidæ*) und die einfachste Methode dieselben auszurotten. St. Petersburg. 1899, 19 pp.  
In Russian. Summary by v. ADELUNG. Zool. Centrbl. vii, p. 807.
1050. POSPJELOW, W. Die Parasiten der Hessenfliege in Russland. Illustr. Zeitschr. Ent. v, pp. 261-264. [*Hymenoptera*.]
1051. POUJADE, G. A. Description d'une nouvelle espèce de *Lépidoptère* de Perse. Bull. Mus. Paris 1900, p. 68.
1052. POULTON, E. B. Physiology versus natural selection; an unnatural antithesis. Nature lxi, pp. 217, 218.  
Re colour and pigmentation in insects.
1053. —. Remarks on the preceding paper. Zoologist 1900, pp. 550-554.  
"Conscious" mimicry; relates to MARSHALL (860).
1054. PRATT, H. S. The embryonic history of imaginal discs in *Melophagus ovinus* L., together with an account of the earlier stages in the development of the insect. P. Boston Soc. xxix, No. 13, pp. 241-272, pls. i-vii. [*Diptera*.]  
Summary by HEYMONS, Zool. Centrbl. viii, pp. 245-248.
1055. PRENANT, A. Notes cytologiques. Cellules trachéales des Oestres. Arch. anat. micr. iii, pp. 293-336, pls. xv, xvi.
1056. PROUT, L. B. On the 'Ankündigung eines systematischen Werkes von den Schmetterlingen der Wienergegend' of Schiffermüller and Denis. Ann. Nat. Hist. vi, pp. 158-160. [*Lepidoptera*.]
1057. —. *Oporabia autumnata* from Rannoch, with reference to several other related forms. Entomologist xxxiii, pp. 53-61, pls. i, ii. [*Lepidoptera*.]

1058. PROWAZEK, S. Bau und Entwicklung der *Collembolen*. Arb. Inst. Wien xii, pp. 335-370, 2 plates, i and ii.  
Summary, J. R. Micr. Soc. 1900, p. 580.
1059. —. Zur Nervenphysiologie der Insekten. Zool. Garten xli, pp. 145-154.
1060. PÜNGELER, R. [Continuation.] Neue *Macrolepidopteren* aus Central-Asien. Deutsche ent. Zeitschr. Lep. xii, pp. 288-299, pls. viii, ix; and vol. xiii, pp. 115-123, pl. iv.  
PUNGUR, J. [See PASZLAWSKY (981).]
1061. QUAIL, A. Life histories in the *Hepialid* group of *Lepidoptera*, with description of one new species and notes on imaginal structure. Tr. ent. Soc. London 1900, pp. 411-432, pls. v, vi.
1062. —. Entomology in New Zealand. Entomologist xxxiii, pp. 5-9. [*Lepidoptera*.]  
Chiefly criticisms and suggestions as to Hudson's work on N. Z. Insecta. Cf. Zool. Rec. xxxv, *Ins.* (580).
1063. —. Diphyletism in the *Lepidoptera*. Entomologist xxxiii, pp. 221-223.  
Cf. GROTE (535).
1064. —. A fragmentary paper on the larval structure etc. of *Hepialus virescens* (D'bid.) of New Zealand. P. Soc. Queensland xv, pp. 89-93, pl. i. [*Lepidoptera*.]
1065. QUAINANCE, A. L. Contributions toward a monograph of the American *Aleurodidae*. Bull. U. S. Dep. Agric. Ent. tech. viii, pp. 9-43, pls. i-viii.
- 1065A. \* —. The Strawberry Thrips. Bull. Florida exp. Stat. No. 46, 1898.  
Summary in Zool. Centrbl. vii, p. 949.
1066. \*QUAJAT, E. Prodotti respiratori della uova del filugello durante l' incubazione normale. Estratto Ann. Acc. Agric. Torin. xlii, 1899.  
Summary, Illustr. Zeitschr. Ent. v, p. 158.
1067. RABES, O. Zur Kenntnis der Eibildung bei *Rhizotrogus solstitialis* L. Zeitschr. wiss. Zool. lxvii, pp. 340-348, pl. xix. [*Coleoptera*.]  
Summary by ESCHERICH, Zool. Centrbl. vii, p. 513.
1068. RÁDL, E. Über die Krümmung der zusammengesetzten Arthropodenaugen. Zool. Anz. xxiii, pp. 372-379.
1069. —. Untersuchungen über den Bau des Tractus opticus von *Squilla mantis* und von anderen Arthropoden. Zeitschr. wiss. Zool. lxvii, pp. 551-598, pl. xxxii.  
Discusses double eyes in Insects. Summary J. R. Micr. Soc. 1901, p. 36.
- 1069A. —. Ueber den Bau und die Bedeutung der Nervenkreuzungen im Tractus opticus der Arthropoden. SB. Böhmisch. Ges. 1899, xxiii, 19 pp., 1 pl.
1070. RAFFRAY, A. Australian *Pselaphidae*. P. Linn. Soc. N. S. Wales xxv, pp. 131-249, pl. x. [*Coleoptera*.]  
Includes description of *Coptotermes raffrayi* by WASMANN on p. 244.
1071. —. Description de deux *Pselaphides* nouveaux. Bull. Soc. ent. France 1900, p. 305. [*Coleoptera*.]

1072. REBEL, H. Ueber die systematische Stellung einiger ostpaläarktischer *Heterocer*. Deutsche ent. Zeitschr. Lep. xiii, pp. 105–108.
1073. —. *Cledeobia hamptoni*, eine neue paläarktische *Pyrallid*. Verh. Ges. Wien I, p. 304. [*Lepidoptera*.]
1074. —. *Acidalia metohiensis*, nov. spec. T. c. p. 451. [*Lepidoptera*.]
1075. —. Zur Auffassung der *Lemoniiden* als selbständige *Lepidopteren*-familie. Ent. Nachr. xxvi, pp. 49–51.
1076. REDIKORZEW, W. Untersuchungen über den Bau der Ocellen der Insekten. Zeitschr. wiss. Zool. lxviii, pp. 581–624, pls. xxxix, xl. Summary, J. R. Micr. Soc. 1901, p. 148.
1077. \*REDTENBACHER, J. Die *Dermatopteren* und *Orthopteren* (Ohrwürmer und Geradflügler) von Oesterreich-Ungarn und Deutschland. Wien 1900, 8vo, 148 pp., 1 pl. Cf. Verh. Ges. Wien I, p. 579.
1078. RÉGIMBART, M. *Coléoptères* aquatiques capturés dans l'île d'Aldabra, près des Comores, par le Dr Voeltzkow de Strasbourg, et communiqués par le Dr Bergröth. Bull. Soc. ent. France 1900, pp. 49–51.
1079. —. Description d'un *Dytiscide* nouveau de Perse. T. c. p. 121. [*Coleoptera*.]
1080. —. Sur quelques *Dytiscides* nouveaux de l'Amerique méridionale. Ann. Mus. Genova xl, pp. 524–530. [*Coleoptera*.]
1081. —. Contribution à l'étude de la faune entomologique de Sumatra. (Chasses de M. J. L. Weyers.) IX. *Dytiscides*. Ann. Soc. ent. Belgique xlv, pp. 147, 148. [*Coleoptera*.]
1082. REH, L. Versuche über die Widerstandsfähigkeit von Diaspinen gegen äussere Einflüsse. Biol. Centrbl. xx, pp. 741–751, 799–815. [*Coccidæ*.]
1083. —. Periodicität bei Schildläusen. Illustr. Zeitschr. Ent. v, pp. 161, 162. [*Coccidæ*.]
1084. —. Über Schildbildung und Hautung bei *Aspidiotus perniciosus* Comstock. Zool. Anz. xxiii, pp. 502–504. [*Coccidæ*.]
1085. —. Zuchtergebnisse mit *Aspidiotus perniciosus* Comst. Mt. Mus. Hamburg xvii, 1899, Beih. 3, pp. 237–257. [*Coccidæ*.] Summary, Zool. Centrbl. viii, p. 169.
1086. —. Über *Aspidiotus ostreaeformis* Curt. und verwandte Formen. Mt. Mus. Hamburg xvii, 1899, pp. 259–271. [*Coccidæ*.]
1087. —. Die Beweglichkeit von Schildlaus-Larven. T. c. pp. 273–278. Summary, Zool. Centrbl. viii, p. 167.
1088. REHN, J. A. G. Notes on Mexican *Orthoptera*, with descriptions of new species. Tr. Amer. ent. Soc. xxvii, pp. 85–96 (incomplete).
1089. REICHENBACH, —. Über lebende Ameisenkolonien in künstlichen Nestern. Ber. Senckenb. Ges. 1899, pp. xcv, xcvi. [*Hymenoptera*.]
1090. REITTER, E. Bestimmungs-Tabelle der europäischen *Coleopteren*: enthaltend: *Carabidæ*. Abtheilung *Harpalini*. Verh. Ver. Brunn xxxviii, pp. 33–155.
1091. —. *Coleopterologische* Notizen. lxviii, Wien. ent. Zeit. xix, pp. 11–13; lxix, t. c. pp. 130–132; lxx, t. c. pp. 242, 243.

1092. [REITTER, E.] *Coleoptera* gesammelt im Jahre 1898 in Chin. Central-Asien von Dr Holderer in Lahr. T. c. pp. 153-166, pl. i.
1093. —. Eine neue Art der *Coleopteren*-Gattung *Acanthocinus* aus Bosnien. T. c. p. 177.
1094. —. Neue, von Herrn Dr John Sahlberg auf seinen Reisen in Corfu, Palästina und Centralasien gesammelte *Coleopteren*. T. c. pp. 217-220.
1095. —. Beschreibung und Abbildung von neun neuen *Coleopteren* der paläarktischen Fauna. T. c. 225-232, pl. ii.
1096. —. Uebersicht der mir bekannten Arten der *Coleopteren*-(*Elateriden*-) Gattung *Pleonomus* Mèn. aus Central-Asien. Ent. Nachr. xxvi, pp. 87-89.
1097. —. Uebersicht der mit *Erodium* verwandten paläarktischen *Coleopteren*-Genera. T. c. pp. 299-302.
1098. —. Uebersicht der mir bekannten Arten der *Coleopteren*-Gattung *Dila* Fisch. T. c. pp. 295, 296.
1099. —. Beitrag zur *Coleopteren*-Fauna des russischen Reiches. Deutsche ent. Zeitschr. 1900, pp. 49-59.
1100. —. Uebersicht der Arten der Curculioniden-Gattung *Mylocerus* Schönh. und *Corigetia* Desbr. der centralasiatischen Fauna. T. c. pp. 60-68. [*Coleoptera*.]
1101. —. Beitrag zur *Coleopteren*-Fauna von Europa und den angrenzenden Ländern. T. c. pp. 81-88.
1102. —. Revision der *Coleopteren*-Gattung *Blechnus* Motsch. aus Europa und russisch Asien. T. c. pp. 369-380.  
— [See also BODEMEYER (131).]
1103. REUTER, E. Über die Weissähigkeit der Wiesengräser in Finland. Ein Beitrag zur Kenntnis ihrer Ursachen. Acta Soc. Faun. Fenn. xix, No. 1, v and 136 pp., 2 pls.
1104. —. Bidrag till Kännedomen om *Microlepidopter*-faunam i Ålands och Åbo Skärgårdar. I. *Pyralidina*, *Tortricina*. Op. cit. xv, No. 5, pp. 1-79.
1105. REUTER, O. M. *Capsidae* novae mediterraneae. I. Ofv. Finska Forh. xlii, pp. 131-162; II. t. c. pp. 259-267. [*Hemiptera*-*Heteroptera*.]
1106. —. *Heteroptera* palaeartica nova et minus cognita. I. t. c. pp. 209-239; II. t. c. pp. 268-281.
1107. —. *Hemiptera* *gymnocerata* in Algeria meridionali a D.D. Dr H. Krauss et Dr J. Vosseler collecta. T. c. pp. 240-258.
1108. —. Description d'une espèce et d'une variété nouvelles du genre *Acanthia* Latr. Bull. Soc. ent. France 1900, p. 156. [*Hemiptera*-*Heteroptera*.]
1109. —. Quelques *Hémiptères* du Maroc. T. c. pp. 186-189.
1110. RIBAGA, C. Descrizione di un nuovo genere e di una nuova specie di *Psocidi* trovato in Italia. Riv. Patol. Veg. viii, pp. 156-158, pl. vii. [*Neuroptera*.]
1111. —. Una specie nuova di *Psocide* trovata in Italia. T. c. pp. 364-366. [*Neuroptera*.]

1112. [RIBAGA, C.] Osservazioni sull' anatomia del *Trichopsocus dalii* M'Lachl. Nota preventiva. T. c. pp. 370-374. [*Neuroptera*.]
1113. —. Contributo alla conoscenza dei *Psocidi* italiani. T. c. pp. 375-386. [*Neuroptera*.]
1114. RIBBE, C. Neue *Lepidopteren* aus der Süd-See und einige Bemerkungen. Deutsche ent. Zeitschr. Lep. xii, pp. 407-409.
1115. RICARDO, MISS G. Notes on the *Pangoninae* of the family *Tabanidae* in the British Museum collection. Ann. Nat. Hist. v, pp. 97-121, 167-182, pl. i. [*Diptera*.]
1116. —. Notes on *Diptera* from South Africa (*Tabanidae* and *Asilidae*). Op. cit. vi, pp. 161-178.
1117. —. Description of five new species of *Pangoninae* from South America. T. c. pp. 291-294. [*Diptera*.]
1118. RIFFARTH, H. Die Gattung *Heliconius* Latr. neu bearbeitet und Beschreibung neuer Formen. Berlin. ent. Zeitschr. xlv, pp. 183-214. [*Lepidoptera*.]  
Also issued separately pp. 1-33, without any indication of origin, dated September, 1900.
1119. RIE, F. Libellen vom Bismarck-Archipel gesammelt durch Prof. Friedr. Dahl. Arch. Naturg. lxvi, pp. 175-204, pls. ix, x. [*Odonata*.]
1120. RITTER, C. & RÜSSAAMEN, E. H. Die Reblause und ihre Lebensweise. Berlin, 1900, folio, 31 pp., 17 plates. [*Aphidae*.]
1121. RIVERS, J. J. A new *Metrius* from California. Ent. News Philad. xi, p. 389. [*Coleoptera*.]
1122. RÖBER, J. Neue Schmetterlinge. Ent. Nachr. xxvi, pp. 199-204. [*Lepidoptera*.]
1123. ROBERTSON, C. *Nomada sayi* and two related new species. Canad. Ent. xxxii, pp. 293-295. [*Hymenoptera*.]
1124. RÖDER, V. v. *Trichioscelis* nov. gen. *Dasypogoninorum*. Ent. Zeit. Stettin lxi, pp. 337-340. [*Diptera*.]
1125. ROESCHKE, H. Carabologische Notizen. v. Ent. Nachr. xxvi, pp. 57-63; vi. t. c. pp. 68-72; vii. t. c. p. 162. [*Coleoptera*.]
1126. ROGER, —. Nouvelles espèces de *Buprestide* du genre *Trachys* Fabricius. Echange xvi, p. 32. [*Coleoptera*.]
1127. ROGERS, L. The relationship of drinking water; water-logging and the distribution of *Anopheles* mosquitos, respectively to the prevalence of malaria north of Calcutta. P. Asiat. Soc. Bengal 1900, pp. 90-98.
1128. \*RÖSLER, R. Die Raupen der Grossschmetterlinge Deutschlands, Leipzig.  
Tables for the determination of species; cf. Berlin. ent. Zeitschr. xlv, p. 313.
1129. ROSS, R. Malaria and mosquitoes. Nature lxi, pp. 522-527.  
Lecture given at the Royal Institution.
1130. — & FIELDING-OULD, R. Diagrams illustrating the life-history of the parasites of malaria. Quart. J. Micr. Sci. 1900, pp. 571-579, pls. 30, 31.
1131. \*ROSSIKOW, K. N. Die Anwendung des Pariser Grüns zur Bekämpfung der Wanderheuschrecke. St. Petersburg. 1899, 15 pp.  
In Russian. Summary Zool. Centrbl. viii, p. 63.

1132. ROSSINSKY, D. Der Maulwurfsbau. Zool. Jahrb. Syst. xiii, pp. 287-298, pls. xxiv, xxv. [*Orthoptera*.]
1133. RÖSSLER, E. *Odonata* fabr. s. osobitim obzirom na Hrvataku, Slavoniju i Dalmaciju. Glasnik Naravnost. druzt. xii, 1900, pp. 1-99.
1134. ROTHSCHILD, HON. N. C. Notes on *Pulex avium* Taschb. Nov. Zool. vii, pp. 539-543, pl. ix. [*Aphaniptera*.]
1135. —. Some new exotic fleas. Ent. Rec. xii, pp. 36-38. [*Aphaniptera*.]
1136. ROTHSCHILD, HON. W. Some new or recently described *Lepidoptera*. Nov. Zool. vii, pp. 274-276, pl. v.
1137. — & JORDAN, K. A monograph of *Charaxes* and the allied Prionopterous genera [continued]. T. c. pp. 281-524, pls. vi, vii, viii, xi, xii. [*Lepidoptera*.]
1138. ROUGET, C. La phagocytose et les leucocytes hématophages. C.R. Soc. Biol. lii, pp. 307-310.
1139. ROUSSEAU, E. *Coléoptères, Carabidæ*. Diagnoses d'insectes recueillis par l'expédition antarctique belge. Ann. Soc. ent. Belgique xlv, p. 108.
1140. —. Contribution à l'étude des *Carabides* de l'Afrique centrale. T. c. pp. 410-423. [*Coleoptera*.]
1141. RÜBSAAMEN, E. H. Über Zoocecidien von der Balkan-Halbinsel. Illustr. Zeitschr. Ent. v, pp. 177-180, 194-197, 213, 230, 245.  
Arranged according to plants. Very little mention of Insecta.  
— [See also RITTER & RÜBSAAMEN (1120).]
1142. RUDOW, —. Die Wohnungen der Hautflügler Europas mit Berücksichtigung der wichtigen Ausländer. Berlin. ent. Zeitschr. xlv, pp. 269-296. [*Hymenoptera*.]  
Mit Beiträgen von C. KOPP.
1143. SAHLBERG, J. *Coleoptera mediterranea et rosso-asiatica nova vel minus cognita itineribus annis 1895-1896 et 1898-1899 collecta*. 1. (*Carabidæ, Haliptidæ, Hydrophilidæ et Heteroceridæ*.) Ofv. Finska Forh. xlii, pp. 174-208.
1144. —. Eine neue Art der Bembidiinengattung *Anillus* von Corfu. Verh. Ges. Wien I, p. 137. [*Coleoptera*.]
1145. —. Catalogus *Coleopterorum* faunæ Fennicæ geographicus. Acta Soc. Faun. Fenn. xix, No. 4, viii and 132 pp., 2 maps.
1146. SAINT-HILAIRE, K. K. Über die Entstehung des Eies bei *Dytiscus*. Protok. St. Peterb. Obshch. 1899, pp. 1-16.  
Summary Zool. Centrbl. vii, p. 161.
1147. SANDERSON, E. D. The larvæ of *Donacia piscatrix* Lac., and *crassipes* Fab. Canad. Ent. xxxii, pp. 249-263. [*Coleoptera*.]
1148. SAUNDERS, E. Mimetic resemblance between *Paragus bicolor* Fab., a *Dipteron*, and *Prosopis variegata* Fab., a *Hymenopteron*. Ent. Mag. xxxvi, pp. 83, 84.
1149. SAUSSURE, H. DE. Wissenschaftliche Ergebnisse der Reisen in Madagaskar und Ostafrika in den Jahren 1889-95 von Dr A. Voeltzkow. *Hymenoptera. Vespidae*. Abh. Senckenb. Ges. xxvi, pp. 203-240.  
Review by DALLA TORRE. Zool. Centrbl. vii, pp. 519, 520.  
— [See also GODMAN (511).]

1150. SCHÄFFER, C. Ueber württembergische *Collembola*. Jahresh. Ver. Württemb. lvi, pp. 245-280, pl. vi.
1151. SCHAUS, W. New species of *Heterocera* from Tropical America. J. N. York Ent. Soc. viii, pp. 225-234. [*Lepidoptera*.]
1152. SCHENKLING, S. Neue *Cleriden* des Hamburger Museums. Mt. Mus. Hamburg xvii (2 Beiheft), pp. 11-20. [*Coleoptera*.]
1153. —. Neue Amerikanische *Cleriden* nebst Bemerkungen zu schon beschriebenen Arten. Deutsche ent. Zeitschr. 1900, pp. 385-409. [*Coleoptera*.]
1154. SCHILSKY, J. Die Käfer Europa's. Siebenunddreissigstes Heft. Nürnberg, 1900. [*Coleoptera*.]  
Though the title-page says 1900 the case in which the leaves are contained says 1901. The Recorder received his copy from a German bookseller, December 21, 1900.
1155. SCHMIEDEKNECHT, O. Die paläarktischen Gattungen und Arten der *Ichneumoniden* tribus der *Lissonotinen*. Zool. Jahrb. Syst. xiii, pp. 299-398. [*Hymenoptera*.]
1156. —. Neue *Hymenopteren* aus Nord-Afrika. Termes. Fuzetek xxiii, pp. 220-247.
1157. SCHOENICHEN, W. Ueber Tier- und Menschenseele. Zeitschr. Naturw. lxxiii, pp. 225-266.
1158. SCHOUTEDEN, H. Catalogue raisonné des pucerons de Belgique. Ann. Soc. ent. Belgique xlv, pp. 113-139. [*Aphidæ*.]
1159. \*SCHOYEN, W. M. Beretning om Skadeinsekter og Plantesygdomme i 1899. Kristiania, 1900, 42 pp.  
Summary, Illustr. Zeitschr. Ent. v, p. 331.
1160. \*SCHREINER, J. Die hauptsächlichsten Schädlinge der Sonnenblume. St. Petersburg. 1898, 23 pp.  
In Russian. Summary, Zool. Centrbl. viii, pp. 59-61.
1161. \*—. Die wichtigsten Insectenschädlinge des Kohla. St. Petersburg, 1898, 32 pp.  
In Russian. Summary, Zool. Centrbl. viii, pp. 61, 62.
1162. \*—. Die Apfelmotte und die Mittel zu ihrer Bekämpfung. St. Petersburg, 1899, 16 pp.  
In Russian. Summary, Zool. Centrbl. viii, p. 65.
1163. SCHRÖDER, CH. Die Untersuchung der männlichen Genitalanhänge als Kriterium für die Artberechtigung im Genus *Eupithecia*. (*Lepidoptera*, *Geometrae*.) Illustr. Zeitschr. Ent. v, pp. 305-307.
1164. SCHULTHESS RECHBERG, A. v. Der Malaria-parasit und sein Generationswechsel. Mt. Schweiz. ent. Ges. x, pp. 262-266.
1165. SCHULTZ, O. Zwei Fälle von Gynandromorphismus bei *Hadena ochroleuca* Esp. Deutsche ent. Zeitschr. Lep. xii, pp. 303-305. [*Lepidoptera*.]
1166. —. Filarien in paläarktischen *Lepidopteren*. Illustr. Zeitschr. Ent. v, pp. 148, 152, 164, 165, 183, 199, 264, 279, 292, 297.
1167. SCHULTZE, A. Beschreibung neuer paläarktischer *Ceuthorrhynchinen*. [Continuation.] Deutsche ent. Zeitschr. 1900, pp. 17-48. [*Coleoptera*.]
1168. SCHÜTZE, K. T. Die Kleinschmetterlinge der sächsischen Oberlausitz. Deutsche ent. Zeitschr. Lep. xii, pp. 269-287. [*Lepidoptera*.]



1169. SCHWARZ, E. A. Papers from the Harriman Alaska expedition. Entomological results (12); *Coleoptera*. P. Washington Ac. ii, pp. 523-537.
1170. SCHWARZ, O. Verzeichniss der von Hrn. Dr. Schultheiss in N. O.-Sumatra gesammelten *Elateriden* nebst Beschreibung einiger neuen Arten. Deutsche ent. Zeitschr. 1900, pp. 89-97. [*Coleoptera*.]
1171. —. Neue paläarktische *Elateriden*. T. c. pp. 98-111. [*Coleoptera*.]
1172. —. Neue *Elateriden* aus Africa. T. c. pp. 145-160. [*Coleoptera*.]
1173. —. Eine neue Art der *Elateriden*-Gattung *Lycoreus* Cand. aus Madagascar. T. c. pp. 302-304. [*Coleoptera*.]
1174. —. Neue exotische *Elateriden*. T. c. pp. 305-358. [*Coleoptera*.]
1175. —. Beschreibung zweier neuer *Heteroderes*-Arten aus Kinschassa in West-Africa am Stanley-Pool. T. c. pp. 359, 360. [*Coleoptera*.]
1176. SCUDDER, S. H. Catalogue of the described *Orthoptera* of the United States and Canada. P. Davenport Ac. viii, pp. 1-101, pls. i-iii.  
Includes descriptions of some new species.
1177. —. A tropical type of *Acridian* new to the United States. J. N. York Ent. Soc. viii, pp. 213, 214. [*Orthoptera*.]
1178. —. The species of the *Oedipodine* genus *Heliasius* Sauss., occurring in the United States. Psyche ix, pp. 45-47. [*Orthoptera*.]
1179. —. The species of *Hadrotettix*, a genus of *Oedipodinae*. T. c. pp. 67-69. [*Orthoptera*.]
1180. —. Notes on the *Orthopteran* genus *Leprus* Saussure. T. c. pp. 74, 75.
1181. —. The clear-winged species of the *Oedipodine* genus *Mestobregma*. T. c. pp. 90-93. [*Orthoptera*.]
1182. —. A list of the *Orthoptera* of New England. T. c. pp. 99-106. Supplement by HENSHAW, t. c. p. 119.
1183. —. The species of *Circotettix*, a North American genus of *Oedipodinae*. T. c. pp. 135-141. [*Orthoptera*.]
1184. —. New or little known Californian *Orthoptera*. Canad. Ent. xxxii, pp. 329-332.
1185. —. The species of the *Orthopteran* genus *Derotmema*. P. Amer. Ac. xxxv, pp. 387- .  
— . [See also COCKERELL (264).]
1186. SEEBOLD, TH. Sur les aberrations de l'*Agria tau*. Bull. Soc. ent. France 1900, p. 100. [*Lepidoptera*.]  
Case of crossing varieties.
1187. SEIDLITZ, G. VON. Ueber Duftorgane bei Käfern. Verh. Ges. deutsch. Naturf. lxxi, 2, 1, p. 242. [*Coleoptera*.]
1188. —. Ueber *Leptura aquatica* L. und *Donacia dentipes* Fbr. Wien. ent. Zeit. xix, pp. 14-17. [*Coleoptera*.]  
For answer cf. WEISE, t. c. pp. 125, 126.

1189. [SEIDLITZ, G. VON.] *Coleoptera* [in] Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1897. Arch. Naturg. lxiv, Heft 2, 1900, pp. 69–320.
1190. —. *Coleoptera*. Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1898. Arch. Naturg. lxv, Heft 2, 1899, pp. 101–330.
1191. SEMENOW, A. Rod *Pseudobrosicus* Sem. (*Coleoptera*, *Carabidae*) ego gheneticheskaya svyaz i znachenie v turanskoj faune. Horæ Soc. ent. Ross. xxxiv, pp. 41–51.
1192. —. Rod *Brosicosoma* Putz. (*Coleoptera*, *Carabidae*), ego vid i ikh gheographicheskoe raspredyedenie. T. c. pp. 74–87.
1193. —. *Coleoptera* nova Rossiae europae et Caucasus. T. c. pp. 88–95.
1194. —. *Coleoptera* asiatica nova. ix. T. c. pp. 303–334.
1195. —. *Coleoptera* asiatica nova. x. T. c. pp. 577–605.  
Pp. 599–605 are devoted to an Index to the ten parts.
1196. —. *Coleoptera* asiatica nova. xi. T. c. pp. 676–688.
1197. —. Sur un nouveau genre de la famille des *Hydrophilidae* [*Coleoptera*] et contributions à l'étude du parallélisme morphologique [morphomatique]. T. c. pp. 614–630.  
The discussion is in Russian. Summary by v. ADELUNG, Zool. Centrbl. vii, pp. 703–705.
1198. —. De nonnullis *Oedemeridarum* generibus. T. c. pp. 643–655. [*Coleoptera*.]
1199. —. Commentarii de *Meloidis*. T. c. pp. 479–497. [*Coleoptera*.]
1200. —. *Polyarthron bedeli*, sp. n., i obzer ego russkich sorodichej (*Coleoptera*, *Cerambycidae*). T. c. pp. 249–259.  
SEMON, R. [See HELLER (574) and HORVÁTH (607).]
1201. SEMPER, G. Die Schmetterlinge der Philippinischen Inseln. Beitrag zur Indo-Malayischen *Lepidopteren*-Fauna. Zweiter Band, Vierte Lief. pp. 513–567, pls. 2, R, S, T and lx. [*Lepidoptera*, *Noctuidae*.]
1202. SEURAT, L. G. Observations biologiques sur les parasites des chènes de la Tunisie. Ann. Sci. Nat. xi, pp. 1–34.
1203. —. Observations sur les organes génitaux mâles des *Coléoptères*. Bull. Mus. Paris 1900, pp. 407–409.
1204. —. Observations sur les organes génitaux externes des *Coléoptères*. Op. cit. 1899, pp. 364–366.
1205. —. Sur la morphologie de l'appareil respiratoire de la larve et de la nymphe du *Bruchus ornatus* Boh. C.R. Ac. Sci. cxxxi, pp. 620–623. [*Coleoptera*.]
1206. —. Sur l'appareil respiratoire de la larve de la *Chrysis shanghaiensis* Smith. Bull. Mus. Paris 1900, pp. 236–238. [*Hymenoptera*.]
1207. —. Sur la morphologie de l'appareil respiratoire de la larve du *Tryphon vesparum* Ratz. T. c. pp. 279, 280. [*Hymenoptera*.]
1208. SHARP, D. On the insects from New Britain. [From] WILLEY Zoological Results Part iv, pp. 381–394, pl. xxxv.  
Separate copies were distributed in September 1899.

1209. [SHARP, D.] *Coleoptera Phytophaga* [in] *Fauna Hawaiiensis* ii, pp. 91-116, pl. vi.
1210. —. Some undescribed species of *Trogophleus* with a new genus. *Ent. Mag.* xxxvi, pp. 230-234. [*Coleoptera*.]  
Cf. FAUVEL (403).
1211. —. *Coleoptera* from Iceland and the Faroë islands, collected by N. Annandale, Esq., in 1900. *Ent. Mag.* xxxvi, pp. 253-255.
1212. —. Sur la famille *Discolomidae*. *Rev. Ent. franc.* xix, p. 193. [*Coleoptera*.]  
— . [See also GODMAN (511).]
1213. SHARPE, MISS E. M. A monograph of the genus *Teracolus*. Parts vi-viii, pp. 57-100, pls. 20-31. [*Lepidoptera*.]
1214. —. On a collection of butterflies from the Bahamas. *P. Zool. Soc. London* 1900, pp. 197-203, pl. xix. [*Lepidoptera*.]
1215. SHELFORD, R. Observations on Mimicry in Bornean insects. *Rep. Brit. Ass.* 1900, pp. 795-797.
1216. SILVESTRI, F. Anche *Projapyx styliifer* O. F. Cook nella R. Argentina. *Zool. Anz.* xxiii, p. 113. [*Thysanura*.]
1217. SINÉTY, R. DE. Sur le parthénogénèse des *Phasmes*. *Bull. Soc. ent. France* 1900, pp. 195-197. [*Orthoptera*.]
1218. —. La mue chez les *Phasmes* du genre *Leptynia*. *T. c.* pp. 228, 229. [*Orthoptera*.]
1219. —. Les tubes de Malpighi chez les *Phasmes*. *T. c.* pp. 333-335. [*Orthoptera*.]
1220. —. Homologation du testicule chez les *Phasmes*. *T. c.* pp. 350-352. [*Orthoptera*.]
1221. SJÖSTEDT, Y. Monographie der Termiten Afrikas. *Svenska Ak. Handl.* xxxiv, No. 4, 236 pp., ix pls.
1222. —. *Odonaten* aus Kamerun West-Afrika. Beiträge zur Kenntniss der Insektenfauna von Kamerun No. 6. *Bih. Svenska Ak.* xxv, No. 2, 62 pp.
1223. —. *Mantodeen, Phasmodeen und Gryllodeen* aus Kamerun und anderen Gegenden Westafrikas. Beiträge zur Insektenfauna von Kamerun No. 7. *T. c.* No. 6, 36 pp., 1 pl. [*Orthoptera*.]
1224. —. San José-sköldlusen (*Aspidiotus perniciosus*), dess utvecklingsstadier och biologi. *Ent. Tidskr.* xxi, pp. 121-136. [*Coccidæ*.]  
Apparently a compilation from American authors.
1225. SKINNER, H. Revision of the American species of the genus *Ceronympha*. *Tr. Amer. ent. Soc.* xxvi, pp. 299-309, pl. vii. [*Lepidoptera*.]
1226. SKORIKOW, A. Eine neue Tomocerus-Art (*Collembola*) aus Ost-Russland. *Annuaire Mus. St. Petersb.* iv, pp. 473-480, pl. xxi.
1227. —. Eine neue *Japyx* (*Thysanura*) aus der östlichen Bucharei. *T. c.* pp. 320-325, pl. vii.
1228. —. "Zoologische Ergebnisse der Russischen Expedition nach Spitzbergen im Jahre 1899." *Collembola*. *Op. cit.* v, pp. 190-209, pl. v, map.

1229. \*[SKORIKOW, A.] Essai sur la distribution géographique des Aptérygotes d'Europe. Trudui Kharkov. Univ. xxxiv, 1899, pp. 1-6. [*Collembola*.]  
In Russian; Summary, Zool. Centrbl. vii, p. 904.
1230. SLEVOGT, B. Ueber neue kürländische *Rhopalocera*-Varietäten. Beiträge zur Fauna baltica. Horæ Soc. ent. Ross. xxxiv, pp. 524-533.
1231. SLINGERLAND, M. V. The grape root-worm a new grape pest in New York. Bull. 184 Cornell exp. Stat. pp. 21-32. [*Coleoptera*.]
1232. —. The common European praying *Mantis*, a new beneficial insect in America. Bull. 185 op. cit. pp. 35-47. [*Orthoptera*.]
1233. SLOANE, T. G. Studies in Australian entomology. No. ix. New species of *Carabida* (with notes on some previously described species, and synoptic lists of species). P. Linn. Soc. N. S. Wales xxiv, pp. 553-584. [*Coleoptera*.]
1234. —. On the *Carenides* (Fam. *Carabida*). No. iv. Op. cit. xxv, pp. 361-388. [*Coleoptera*.]
1235. SMITH, J. B. Insects of New Jersey. A list of the species occurring in New Jersey, with notes on those of Economic importance. Printed as a supplement to the twenty-seventh annual report of the State Board of Agriculture 1899. Trenton 1900, 8vo, 755 pp., 328 illustrations.  
8,537 species: statistics thereof on p. 701.
1236. —. A hundred new moths of the family *Noctuidæ*. P. U. S. Mus. xxii (No. 1203), pp. 413-495. [*Lepidoptera*.]
1237. —. Contributions toward a monograph of the North American *Noctuidæ*. Revision of the species of *Xylina* Ocha. Tr. Amer. Ent. Soc. xxvii, pp. 1-46, pls. i-v. [*Lepidoptera*.]
1238. —. Contributions..... Revision of the species of *Acontia* Ocha. T. c. pp. 47-84. [*Lepidoptera*.]
1239. —. New *Noctuids* from British North America, with notes on some others. Canad. Ent. xxxii, pp. 217-225. [*Lepidoptera*.]
1240. —. New species of Floridian *Noctuidæ*. J. N. York Ent. Soc. viii, pp. 173-177. [*Lepidoptera*.]
1241. —. The role of Insects in the Forest. Annu. Rep. Geol. New Jersey 1899, pp. 205-232.
1242. —. Report of the entomological department of the New Jersey Agricultural College experiment Station for the year 1899, pp. 421-512.
1243. —. The apple plant louse. Bull. 143, New Jersey exp. stat. pp. 3-23. [*Aphidæ*.]
1244. —. Crude petroleum versus the San Jose or pernicious scale. Bull. 146 op. cit. pp. 3-20.
1245. —. The Angoumois grain moth, *Sitotroga cerealella* Oliv. Bull. 147 op. cit. pp. 3-8.
1246. —. Two strawberry pests. Bull. 149 op. cit. pp. 3-17. [*Lepidoptera*, *Aphidæ*.]  
— [See also COCKERELL (264) and DYAR (360).]

1247. SMITH, W. W. Large colonies of Ants in New Zealand. *Ent. Mag.* xxvi, pp. 7-9. [*Hymenoptera.*]
1248. SNELLEN, P. C. T. Boekaankondiging. Die *Lepidopteren* des Bismarck-Archipels. *Tijdschr. Ent.* xliii, pp. 247-261.  
Relates to PAGENSTECHER (975, 976).
1249. —. *Lycæna donina* nov. spec. *T. c.* pp. 262-264. [*Lepidoptera.*]
1250. —. Aanteekeningen over *Pyralliden*. *T. c.* pp. 265-310, pls. xv-xvii. [*Lepidoptera.*]
1251. —. Ter Herinnering aan F. M. van der Wulp. *T. c.* pp. 1-11.  
— [See also PIEPERS & SNELLEN (1038).]
1252. SNOW, W. A. & MILLS, HELEN. The destructive *Diplosis* of the Monterey pine. *Ent. News Philad.* xi, pp. 489-498. [*Diptera.*]
1253. SNYDER, A. J. The Argynnidæ of North America. *Mem. Chicago ent. Soc.* i, pp. 27-38. [*Lepidoptera.*]
1254. SONTTHONNAX, L. Description de nouvelles espèces de *Saturnides* appartenant à la collection de M. C. Oberthur. *Echange* xvi, pp. 5-7.  
"Extrait des Annales du Laboratoire d'Études de la soie, 9<sup>e</sup> Vol. 1899."
1255. SORHAGEN, L. Beitrag zur Kenntniss der Gattung *Lithocolletis*. *Illustr. Zeitschr. Ent.* v, pp. 211-213, 232, 233, 248-251, 1 pl. [*Lepidoptera.*]
1256. SOULE, C. G. The "cocoons" or "cases" of some burrowing Caterpillars. *Psyche* ix, pp. 7, 8. [*Lepidoptera.*]
1257. SOUTH, R. Variation of *Emydia cribrum* L., in England. *Entomologist* xxxiii, pp. 67, 68. [*Lepidoptera.*]
1258. SPAETH, F. Zwei neue *Casnididen* von Paraguay gesammelt von Herrn G. Boggiani. *Ann. Mus. Genova* xl, pp. 577-579. [*Coleoptera.*]
1259. —. Contribution à la faune entomologique de Sumatra. Voyage de M. J. L. Weyers. VII. *Ann. Soc. ent. Belgique* xlv, pp. 20-24. [*Coleoptera.*]
1260. SPEISER, P. Studien über *Hippobosciden*. I. *Ann. Mus. Genova* xl, pp. 553-562. [*Diptera.*]
1261. —. Ueber die *Strebliden*, Fledermausparasiten aus der Gruppe der pupiparen *Dipteren*. *Arch. Naturg.* lxvi, pp. 31-70, pls. iii, iv.
1262. —. Ueber die *Nycteribiiden*, Fledermausparasiten aus der Gruppe der pupiparen *Dipteren*. *Op. cit.* lxvii, pp. 11-77, pl. iii.
1263. —. Über die Art der Fortpflanzung bei den *Strebliden*, nebst synonymischen Bemerkungen. *Zool. Anz.* xxiii, pp. 153, 154. [*Diptera.*]
1264. —. Übersicht der *Dipterengattung Cyclopodia* Kol. *Ent. Nachr.* xxvi, pp. 289-293.
1265. STANDFUSS, M. Synopsis of experiments in hybridization and temperature made with *Lepidoptera* up to the end of 1898. *Entomologist* xxxiii, pp. 161-167, 283-292, 340-348, 3 pls.  
A translation by E. M. DADD, but it is not stated where from.
1266. —. Études zoologiques expérimentales sur les *Lépidoptères* résultats principaux obtenus jusqu'à la fin de 1898. Rédaction française par H. F. DECKERT. *Ann. Soc. ent. France* lxi, pp. 82-101, pls. 1-3.

1267. STAUDINGER, O. Eine neue Spanische *Noctuide*. Deutsche ent. Zeitschr. Lep. xiii, pp. 109-111. [*Lepidoptera*.]
1268. —. Zwei neue paläarktische *Heterocera*. T. c. pp. 112-114.
1269. —. Ueber *Lepidoptera* aus dem östlichsten Thian-Schan Gebiet. Op. cit. xii, pp. 331-351.
1270. —. Neue *Lepidopteren* des paläarktischen Faunengebiets. T. c. pp. 352-403.
1271. —. Eine neue *Heliconius*-Form. T. c. pp. 404-406. [*Lepidoptera*.]
1272. STEBBING, E. P. Injurious insects of Indian Forests. Calcutta, 1899, 8vo, ii & 152 pp., ix pla.
1273. STEFANELLI, P. Nuovo catalogo illustrativo dei *Lepidotteri Ropaloceri* della Toscana. Bull. Soc. ent. Ital. xxxii, pp. 156-191, 325-374 and 381-396.
1274. STEFANI, T. DE. Zoocedii e Cecidiozoi dell' *Atriplex halimus* L. in Sicilia. Atti Acc. Gioen. lxxvii, Mem. ix, 27 pp., 1 pl.
1275. —. Due galle inedite e i loro autori. Boll. Nat. xx, pp. 65, 66. [*Hymenoptera*.]
1276. STEIN, P. Einige dem Genueser Museum gehörige aus Neu-Guinea und Umgegend stammende *Anthomyiden*. Ann. Mus. Genova xl, pp. 374-395. [*Diptera*.]
1277. —. Die *Tachininen* und *Anthomyinen* der Meigen'schen Sammlung in Paris. Ent. Nachr. xvi, pp. 129-157. [*Diptera*.]
1278. —. Einige neue *Anthomyiden*. T. c. pp. 305-324. [*Diptera*.]
1279. —. *Anthomyiden* aus Neu-Guinea. Termes. Fuzetek xxiii, pp. 129-159. [*Diptera*.]
1280. —. Vier neue aus Bolivia stammende *Homalomyia*-Arten des ungarischen National-Museums. T. c. pp. 205-212. [*Diptera*.]
1281. STEPHENS, J. W. W. & CHRISTOPHERS, S. R. Distribution of *Anopheles* in Sierra Leone. Rep. malaria Com. R. Soc. London i, pp. 42-75.  
— [See also CHRISTOPHERS & STEPHENS (257) and DANIELS, CHRISTOPHERS & STEPHENS (310).]
1282. STICHEL, H. Bemerkenswerthe Schmetterlings-Varietäten und Aberrationen. Berlin. ent. Zeitschr. xlv, pp. 117-145, pl. ii. [*Lepidoptera*.]
1283. STIERLIN, G. Fauna Coleopterorum helvetica. I. Theil. Schaffhausen 1900, xii & 667 pp.  
The second and concluding part has been previously recorded.
1284. —. Beschreibung einiger neuer europäischer Rüsselkäfer. Mt. Schweiz. ent. Ges. x, pp. 235, 236. [*Coleoptera*.]
1285. STRITZ, H. Der Genitalapparat der *Mikrolepidopteren*. I. Der männliche Genitalapparat. Zool. Jahrb. Anat. xiv, pp. 135-176, pls. vii-xi.  
Summary by HEYMONS, Zool. Centrbl. viii, pp. 170-172. Also summary in J. R. Micr. Soc. 1901, p. 151.

1286. STOYEL, A. C. A curious instance of the labour-saving instinct in the leaf-cutting bees. *Tr. Hertfordsh. Soc.* x, pp. 191, 192. [*Hymenoptera.*]
1287. STRAND, E. Einige arktische Aberrationen von *Lepidopteren*. *Ent. Nachr.* xxvi, pp. 225, 226.
1288. —. Lepidopterologische undersøgelser særligt i Nordlands amt. *Arch. Naturv. Christiania* xxii, No. 5, pp. 1-62.
1289. STRECKER, H. *Lepidoptera*, *Rhopaloceres* and *Heteroceres*, indigenous and exotic. Supplement No. 3. Reading U. S. 1900, 4to, pp. 13-37.
1290. STROBL, G. Steirische *Hemipteren*. *Mt. Ver. Steiermark* xxvi, pp. 170-224.
1291. —. *Dipterenfauna* von Bosnien, Hercegovina und Dalmatia. *Wiss. Mitt. Bosnien* vii, pp. 552-670.
1292. —. Spanische *Dipteren*. viii Thiel. *Wien. Ent. Zeit.* xix, pp. 1-10. ix Thiel, t. c. pp. 61-70. x Thiel, t. c. pp. 92-100. xi Thiel, t. c. pp. 169-172. xii Thiel, t. c. pp. 207-216.
1293. SUPINO, F. Osservazioni sopra fenomeni che avvengono durante lo sviluppo postembrionale della *Calliphora erythrocephala*. i. Nota preventiva. *Atti Acc. Lincei Rend.* ix, 1, pp. 164-169.
1294. —. Osservazioni sopra fenomeni che avvengono durante lo sviluppo postembrionale della *Calliphora erythrocephala*. *Bull. Soc. ent. Ital.* xxxii, pp. 192-216, pls. ii, iii.  
BERLESE (105) replies, and SUPINO continues the discussion (1295).
1295. —. Lettera aperta al Prof. Antonio Berlese. *T. c.* pp. 375-379.
1296. SURVEYOR, N. F. Parasitic invasion of eggs of common Cockroach. *J. Bombay Med. Soc.* iv, No. 4, Aug. 1900. [*Hymenoptera.*]
1297. SUTTON, W. S. The spermatogonial divisions in *Brachystola magna*. *Kansas Quart.* ix, pp. 135-160, pls. xxxii-xxxv.  
— [See also HUNTER & SUTTON (629).]
1298. SWINHOE, C. Catalogue of Eastern and Australian *Lepidoptera Heterocera* in the collection of the Oxford University Museum. Part II, *Noctuina*, *Geometrina* and *Pyrulidina*. *Pterophoridae* and *Tineina* by the Right Hon. Lord Walsingham and J. H. Durrant. Oxford, 1900, pp. vi and 630, 8 pls.
1299. —. New species of Eastern and Australian moths. *Ann. Nat. Hist.* vi, pp. 305-313. [*Lepidoptera.*]
1300. SYKES, M. L. Termites and Ants of West Africa. From notes by Major W. G. Clements, R.A.M.C. *Tr. Manchester Micr. Soc.* 1899, pp. 85-91. [*Neuroptera* and *Hymenoptera.*]
1301. SZÉPLIGETI, G. Beiträge zur Kenntniss der ungarischen *Ichneumoniden*. II. *Termes. Fuzetek* xxiii, pp. 1-38. [*Hymenoptera.*]
1302. —. *Braconiden* aus Neu-Guinea in der Sammlung des ung. National-Museums. *T. c.* pp. 49-65. [*Hymenoptera.*]
1303. —. Neue *Braconiden* aus Ungarn. *T. c.* pp. 213-219. [*Hymenoptera.*]
1304. —. *Joppinen* des ungarischen National-Museums. *T. c.* pp. 277-290. [*Hymenoptera.*]

1305. TARNANI, J. K. Der Rebenschneider (*Lethrus apterus* Laxm.) und dessen Biologie, Schaden und Bekämpfung. Arb. land.-Inst. Nowaja Alexandria xiii, 1900, 39 pp.  
Summary, Zool. Centrbl. viii, pp. 69, 70. Cf. also Horæ Soc. ent. Ross. xxxiv, p. 44.
1306. TEICH, C. A. Vervollständigtes Verzeichnis der Schmetterlinge der baltischen Provinzen, soweit sie bis zum Frühjahr des Jahres 1899 bekannt geworden sind. KB. Ver. Riga xlii, pp. 9-76. [*Lepidoptera*.]
1307. TERRE, L. Sur l'histolyse musculaire des *Hyménoptères*. C.R. Soc. Biol. lii, pp. 91-93.
1308. —. Métamorphose et phagocytose. T. c. pp. 158, 159.
1309. —. Sur l'histolyse du corps adipeux chez l'abeille. T. c. pp. 160-162.
1310. —. Sur l'histolyse musculaire des *Hyménoptères*. Bull. Soc. ent. France 1900, pp. 23-25.
1311. —. Contributions à l'étude de l'histolyse du corps adipeux chez l'abeille. T. c. pp. 62-66.
1312. TETENS, H. *Papilio sticheli* nov. spec. aut subsp. Ent. Nachr. xxvi, pp. 296-298. [*Lepidoptera*.]  
THALHAMMER, J. [See PASZLAWSZKY (981).]
1313. THEN, F. Beitrag zur Kenntnis der österreichischen Species der *Cicadinen*-Gattung *Deltocephalus*. Mt. Ver. Steiermark xxxvi, pp. 118-169, 2 pls. [*Hemiptera-Homoptera*.]
1314. THEOBALD, F. V. A new *Anopheles* from Sierra Leone. Rep. malaria Com. R. Soc. London i, p. 75. [*Diptera*.]
1315. —. First report on insect pests, etc. for 1899. J. S. Eastern Agric. Coll. Wye, No. 9, pp. 21-47.
1316. —. Report on the collections of mosquitoes (*Culicidae*) received at the British Museum (Natural history) from various parts of the world. London, 1900, 12 pp.
1317. THERESE VON BAYERN, PRINZESSIN. Auf einer Reise in Südamerika gesammelte Insekten. II. *Orthopteren*. Berlin. ent. Zeitschr. xlv, pp. 253-268, pl. iii. [*Neuroptera, Orthoptera*.]
1318. THÉRY, A. Description de deux *Coléoptères* nouveaux du sud-est Algérien. Bull. Soc. ent. France 1900, pp. 32, 33.
1319. —. Description d'un *Coléoptère* nouveau. Naturaliste xxii, p. 33.
1320. \*THIELE, R. Life-history of plant-lice. Zeitschr. Pflanzenkrank. ix, 1899, pp. 260-262. [*Aphidæ*.]  
Cf. J. R. Micr. Soc. 1900, p. 577.
1321. THOMSON, J. C. The prevalence of mosquitoes and malaria in Hong-Kong. J. tropical Med. iv, pp. 23-25.
1322. TINSLEY, J. D. & COLLEGE, M. Contributions to *Coccidology*. II. Canad. Ent. xxxii, pp. 64-67.
1323. TIRABOSCHI, C. Contributo allo studio della cellula nervosa in alcuni invertebrati e specialmente negli insetti. Boll. Soc. Rom. Zool. viii, pp. 53-65, 143-150, pla. i, ii.
1324. TITUS, E. S. G. Notes on Colorado bees. Canad. Ent. xxxii, pp. 303-305. [*Hymenoptera*.]



1325. TORNIER, G. Das Entstehen von Käfermissbildungen, besonders Hyperantennie und Hypermelie. Arch. Entwicklmech. ix, pp. 501-562, 32 cuts, pl. xx. [*Coleoptera*.]  
Summary by ESCHERICH, Zool. Centrbl. vii, pp. 514-517.
- 1325A. TOSQUINET, J. Notice sur quelques *Ichneumonides* inédits de l'Europe méridionale. Ann. Soc. ent. Belgique xlv, pp. 151-173. [*Hymenoptera*.]
1326. —. Diagnoses d'insectes recueillis par l'expédition antarctique Belge. *Hyménoptères*. T. c. p. 104.
1327. TOUGH, J. A new species of *Gomphus*. Mem. Chicago ent. Soc. i, p. 17. [*Odonata*.]
1328. TROTTER, A. Description d'une nouvelle *Rhopalomyia*, d'Italie. Bull. Soc. ent. France 1900, p. 285. [*Diptera*.]  
— [See also KIEFFER & TROTTER (709).]
1329. TRUCHOT, C. Note sur la *Cecidomyia ænophila*. Bull. Soc. Saône xvi, pp. 178-180, pl. [*Diptera*.]
1330. TSCHITSCHÉRINE, T. Note supplémentaire sur le genre *Trichocellus* (Ganglb.). Horæ Soc. ent. Ross. xxxiv, pp. 52-58. [*Coleoptera*.]
1331. —. Notes sur les *Platysmatini* du Muséum d'histoire naturelle de Paris. Horæ Soc. ent. Ross. xxxiv. i, pp. 108-127; ii, pp. 153-198; iii, pp. 207-219; iv, pp. 220-248; v, pp. 260-293; vi, pp. 371-397; vii, pp. 448-478; viii, pp. 509-516; ix, pp. 534-540; x, pp. 666-675. [*Coleoptera*.]
1332. —. Description de quelques nouvelles espèces du genre *Abacetus*. Op. cit. 1899, pp. 156-161. [*Coleoptera*.]
1333. —. Mémoire sur la tribu des *Harpalini*. Horæ Soc. ent. Ross. xxxiv, pp. 335-370. [*Coleoptera*.]
1334. —. Notes sur quelques *Platysmatini* de la région Malgache. T. c. pp. 570-576. [*Coleoptera*.]
1335. —. Révision du sous-genre *Bothriopterus* Chaud. (genre *Platysma* Bon., Tsch.). T. c. pp. 606-613. [*Coleoptera*.]
1336. —. Description d'une nouvelle espèce du sous-genre *Pseudoderus* Seidl. (gen. *Platysma* Bon.). Bull. Soc. ent. France 1900, p. 329. [*Coleoptera*.]
1337. TUMPPEL, H. Die Geradflügler Mitteleuropas [completed]. Eisenach, 4to, 308 pp., 23 pls.  
Review by RIS, pp. 231-235 Mt. Schweiz. ent. Ges. x.
1338. TURNER, A. J. New *Micro-Lepidoptera*, mostly from Queensland. Tr. R. Soc. S. Austral. xxiv, pp. 6-23.
1339. TURNER, G. Two new species of phytophagous *Hymenoptera* belonging to the families *Oryssidae* and *Tenthredinidae* with notes on other sawflies. P. Linn. Soc. N. S. Wales xxv, pp. 514-518.
1340. TUTT, J. W. A natural history of the British *Lepidoptera*, a textbook for students and collectors. Vol. ii, London, 1900, 8vo, viii & 584 pp.  
Deals with *Psychids* and *Lachneids*; and has chapters on metamorphosis in *Lepidoptera* and a section on the phylogeny of the *Lepidopterous* pupa by CHAPMAN.  
Review by BATESON, Ent. Rec. xii, pp. 231-233.

1341. [TUTT, J. W.] New Psychid genera. Ent. Rec. xii, p. 20. [*Lepidoptera*.]
1342. —. Notes on *Masonia edwardsella*, a Psychid new to science. T. c. pp. 43-45. [*Lepidoptera*.]
1343. —. The nature of metamorphosis. P. S. London Ent. Soc. 1899, pp. 20-27.
1344. —. The connection between primary and secondary sexual characters in *Lepidoptera*. Ent. Rec. xii, pp. 199-202.
1345. —. Migration and dispersal of insects: *Lepidoptera*. T. c. pp. 13-16, 69 etc.
1346. UHAGON, S. DE. Ensayo sobre los maláquidos de españa. An. Soc. Espan. xxix, pp. 5-63 and 291-362. [*Coleoptera*.]
- UHRYK, F. [See PASZLAWSZKY (981).]
1347. \*ULE, E. Verschiedenes über den Einfluss der Thiere auf das Pflanzenleben. Ber. deutsche Bot. Ges. xviii, 1900, 122 pp. Summary by KEISSLER, Verh. Ges. Wien I, p. 454.
1348. VANEY, C. Contributions à l'étude des phénomènes de métamorphose chez les *Diptères*. C.R. Ac. Sci. cxxxi, pp. 758-760.
1349. —. Note sur les tubes de Malpighi des larves de *Stratiomys*. Bull. Soc. ent. France 1900, p. 360. [*Diptera*.]
1350. —. Sur une nouvelle fonction de quelques tubes de Malpighi. Ann. Soc. Linn. Lyon xlvii, pp. 155-158.
1351. — & COUTE, A. Sur l'adaptation secondaire de la patte antérieure de *Gryllotalpa vulgaris* Latr. T. c. pp. 150-153. [*Orthoptera*.]
1352. VAULOGER, M. DE. Contribution au catalogue des *Coléoptères* du nord de l'Afrique. *Helopini*. Ann. Soc. ent. France lxxviii, pp. 669-722.
1353. VAYSSIÈRE, A. & BORDAS, L. Étude sur le fourreau d'une espèce de *Psychidé* des environs de Tombouctou. Ann. Fac. Marseille x, pp. 85-100, pl. i. [*Lepidoptera*, *Hymenoptera*.]
- VELLAY, E. [See PASZLAWSZKY (981).]
1354. VERRALL, G. H. President's address. P. ent. Soc. London 1900, pp. xxxix-lxx. Discussion as to value of types.
1355. VIEHMEYER, H. Beobachtungen über das Zurückfinden von Ameisen (*Leptothorax unifasciatus*) zu ihrem Neste. Illustr. Zeitschr. Ent. v, pp. 311-313. [*Hymenoptera*.]
1356. VIGNON, P. Critique de la théorie vésiculaire de la sécrétion. Arch. zool. exp. Notes 1899, pp. xvii-xxv. Experiments with alimentary canal of *Chironomus*.
1357. —. Différenciations cytoplasmiques, cils vibratiles et cuticules. Op. cit. 1900, pp. iii-xviii, cuts. [*Diptera*.] Re epithelium in *Chironomus*.
1358. VILLENEUVE, J. Observations sur quelques types de Meigen. Bull. Soc. ent. France 1900, pp. 157-162, 341, 342, 363, 364, 380. [*Diptera*.]
1359. VOGLER, C. H. Beiträge zur Metamorphose des ... Illustr. Zeitschr. Ent. v, nr. 1

1360. [VOGLER, C. H.] Weitere Beiträge zur Kenntnis von *Dipteren-Larven*. T. c. pp. 273-276, 289-291.
1361. WAHLGREN, E. *Collembola* während der schwedischen Grönlands-expedition 1899 auf Jan Mayen und Ost-Grönland eingesammelt. Ofv. Ak. Forh. lvii, pp. 353-375.  
Summary, J. R. Micr. Soc. 1900, p. 580.
1362. —. Über einige neue *Collembola*-formen aus dem südwestlichen Patagonien. Ent. Tidskr. xxi, pp. 265-270.
1363. —. On some *Apterygogenea* collected in the Volga-delta by Dr E. Lönnberg. Ofv. Ak. Forh. lvi, pp. 847-850.
1364. WALKER, J. J. Practical hints on the formation of a collection of *Coleoptera*. Rep. S. Eastern Soc. 1899, pp. 18-33.
1365. WALSINGHAM, THE LORD. Asiatic *Tortricidæ*. Ann. Nat. Hist. v, pp. 368-386, 451-469, 481-490, and op. cit. vi, pp. 121-136, 234-242, 333-341, 401-408, 429-447. [*Lepidoptera*.]
1366. —. *Micro-Lepidoptera* [in] Monograph of Christmas island. [Cf. ANDREWS (29)], pp. 75-80.
1367. —. The expedition to Sokotra. Descriptions of the new *Micro-Lepidoptera*. Bull. Liverp. Mus. iii, pp. 1-8.
1368. —. A new species of *Aristotelia* bred from *Hypericum*. Ent. Mag. xxxvi, pp. 80, 81. [*Lepidoptera*.]
1369. —. A new *Eriocrania* from England. T. c. p. 106. [*Lepidoptera*.]
1370. —. New Corsican and French *Micro-Lepidoptera*. T. c. pp. 152, 153 and 216-220.
1371. —. On *Tinea* (*Meessia*) *vinculella* H.-S., and its European allies, with descriptions of new species. T. c. pp. 176-179. [*Lepidoptera*.]  
— [See also SWINHOE (1298).]
1372. WALTON, L. B. The basal segments of the Hexapod leg. Amer. Natural. xxxiv, pp. 267-274.
1373. WARBURTON, C. Annual report for 1900. J. Agric. Soc. England 1900, pp. 742-752.
1374. WARREN, W. New genera and species of *Thyrididæ* and *Geometridæ* from Africa. Nov. Zool. vii, pp. 90-98. [*Lepidoptera*.]
1375. —. New genera and species of *Drepanulidæ*, *Thyrididæ*, *Epiplemidæ* and *Geometridæ* from the Indo-Australian and Palæarctic regions. T. c. pp. 98-116. [*Lepidoptera*.]
1376. —. New genera and species of American *Drepanulidæ*, *Thyrididæ*, *Epiplemidæ* and *Geometridæ*. T. c. pp. 118-225. [*Lepidoptera*.]
1377. WASMANN, E. Neue Dorylinengäste aus dem neotropischen und dem äthiopischen Faunengebiet. (114 Beitrag zur Kenntniss der Myrmekophilen und Termitophilen). Zool. Jahrb. Syst. xiv, pp. 215-290, pls. xiii, xiv. [*Coleoptera*, *Hymenoptera*.]
1378. —. *Termitoxenia*, ein neues flügelloses, physogastres *Dipteren-genus* aus Termitennestern. I Theil. Äussere Morphologie und Biologie. (113 Beitrag zur Kenntniss der Myrmekophilen und Termitophilen.) Zeitschr. wiss. Zool. lxxvii, pp. 599-617, pl. xxxiii.  
Summary, Zool. Centrbl. viii, p. 64. Review by MÜLLER, Wien. ent. Zeit. xix, p. 222.

1379. [WASMANN, E.] Zur Kenntnis der termitophilen und myrmekophilen *Cetoniden* Südafrikas. Illustr. Zeitschr. Ent. v, pp. 65-68, 81-84, 1 pl. with Nachtrag, p. 103. [*Coleoptera*.]  
Summary in Zool. Centrbl. viii, p. 71.
1380. \*——. Instinct und Intelligenz im Thierreich. Zweite Vermehrte Auflag. Freiburg-im-Breisgau, 1899, 121 pp.  
Includes a new chapter on the different kinds of "learning." Cf. Ent. Nachr. xxvi, p. 220.
1381. ———. Einige Bemerkungen zur vergleichenden Psychologie und Sinnesphysiologie. Biol. Centrbl. xx, pp. 342-350.  
UEXKÜLL also discusses the subject, t. c. pp. 497-502.
1382. ———. The guests of Ants and Termites. Ent. Rec. xii, pp. 41 etc.  
Translated extracts by DONISTHORPE from WASMANN's paper, Zool. Rec. 1898, *Insecta*, Titles (1291).  
———. [See also BRAUNS (171) and RAFFRAY (1070).]
1383. WATERHOUSE, C. O. Descriptions of new *Coleoptera* from Hainan island. Ann. Nat. Hist. v, pp. 310-312.
1384. ———. New species of the *Coleopterous* genus *Prionocalus* from Ecuador and Peru. T. c. pp. 503-506.
1385. ———. Description of a new *Buprestidæ*. Op. cit. vi, p. 219. [*Coleoptera*.]
1386. ———. *Coleoptera, Buprestidæ, Elateridæ* [in] Monograph of Christmas island [cf. ANDREWS (29)] pp. 99-102.
1387. WATERHOUSE, G. A. Descriptions of new species of Australian *Rhopalocera*. P. Liun. Soc. N. S. Wales xxv, pp. 52-57, pl. i.  
WEBB, W. M. [See BORDAGE (139-142).]
1388. WEBSTER, F. M. Some species of *Diptera* inhabiting or frequenting the wheat fields of the middle West. Canad. Ent. xxxii, pp. 212, 213.
1389. ———. *Harpalus caliginosus* as a strawberry pest, with notes on other phytophagous *Carabidæ*. T. c. pp. 265-271. [*Coleoptera*.]
1390. ——— & MALLY, C. W. The purslane saw-fly—*Schizocerus zabriskei* Ashm., M. S. T. c. pp. 51-54. [*Hymenoptera*.]
1391. \*WEED, C. M. The spiny elm caterpillar. [*Euvanessa antiopa*.]  
Bull. New Hampsh. exp. Sta. lxvii, pp. 123-141, 16 figg. [*Lepidoptera*.]  
Cf. Entomologist xxxiii, p. 207.
1392. WEEKS, A. C. Ovipositing of *Vanessa antiopa*. J. N. York Ent. Soc. viii, p. 181. [*Lepidoptera*.]
1393. ———. In memoriam: Rev. Dr George D. Hulst. T. c. pp. 248-250, portrait.  
Bibliographic list by W. BEUTENMÜLLER appended.
1394. WEISE, J. Beschreibungen von *Chrysomeliden* u. synonymische Bemerkungen. Arch. Naturg. lxvi, pp. 267-296. [*Coleoptera*.]
1395. ———. Kurze Mittheilungen über ostafrikanische *Coccinelliden* und Beschreibungen neuer Arten. Deutsche ent. Zeitschr. 1900, pp. 113-131. [*Coleoptera*.]
1396. ———. Neue *Coleopteren* aus Kleinasien. T. c. pp. 132-140. [*Coleoptera*.]  
A repetition of the *Chrysomelidæ* described in BODEMEYER (131).

1397. [WEISE, J.] Einige neue *Hispinen* und *Cassidinen* von Paul Weise in Usambara gesammelt. T. c. pp. 213-217. [*Coleoptera*.]
1398. —. Eine neue *Alurnus*-Form. T. c. pp. 218, 219. [*Coleoptera*.]
1399. —. Berichtigung von Beobachtungen über die Nahrung unser *Coccinelliden*. T. c. pp. 297-301. [*Coleoptera*.]
1400. —. Coccinelliden aus Ceylon gesammelt von Dr Horn. T. c. pp. 417-445. [*Coleoptera*.]
1401. —. *Aspidomorpha gorhami*. T. c. p. 445. [*Coleoptera*.]
1402. —. Beschreibungen africanischer *Chrysomeliden* nebst synonymischen Bemerkungen. T. c. pp. 446-459. [*Coleoptera*.]
1403. —. Zwei neue *Cassidinen*. T. c. p. 460. [*Coleoptera*.]  
 —. [See also BODEMEYER (131) and SEIDLITZ (1188).]
1404. WEISMANN, A. Ueber die Parthenogenese der Bienen. Anat. Anz. xviii, pp. 492-499. [*Hymenoptera*.]  
 Summary by HEYMONS, Zool. Centrbl. viii, p. 173.
1405. WERMELIN, J. H., AURIVILLIUS, CH. & RAMSTEDT, G. Berättelse on Nunnehärjningen i Södermanland och Östergötland under år 1899, samt om åtgärderna för insektens bekämpande. Ent. Tidskr. xxi, pp. 97-111.  
 With appended proclamations etc., pp. 111-118.
1406. WESCHÉ, W. The ptilinum of *Diptera*. Sci. Gossip vi, pp. 294, 295.
1407. WHEELER, W. M. A study of some Texan *Ponerinae*. Biol. Bull. ii, pp. 1-32. [*Hymenoptera*.]
1408. —. The habits of *Ponera* and *Stigmatomma*. T. c. pp. 43-69. [*Hymenoptera*.]
1409. —. The female of *Eciton sumichrasti* Norton, with some notes on the habits of Texan *Eciton*. Amer. Natural. xxxiv, pp. 563-574. [*Hymenoptera*.]
1410. —. New species of *Dolichopodidae* from the United States. P. Calif. Ac. ii, No. 1, pp. 1-78, pls. i-iv. [*Diptera*.]  
 On the wrapper this is said to be "issued September 29, 1899" but it only reached England in May, 1901.
1411. —. On the genus *Hypocharassus* Mik. Ent. News Philad. xi, pp. 423-425. [*Diptera*.]
1412. —. A new myrmecophile from the mushroom gardens of the Texan leaf-cutting ant. Amer. Natural. xxxiv, pp. 851-862. [*Orthoptera*.]
1413. —. The habits of *Myrmecophila nebrascensis* Bruner. Psyche ix, pp. 111-115. [*Orthoptera*.]
1414. WICKHAM, H. F. On *Coleoptera* found with ants. Fifth paper. Psyche ix, pp. 3-5.
1415. WILLEM, V. Un type nouveau de *Sminthuride*: *Megalothorus*. Ann. Soc. ent. Belgique xlv, pp. 7-10, pl. [*Aptera*.]
1416. —. Deux formes nouvelles d'*Isotomiens*: *Isotoma stagnalis* et *Isotoma tenebricosa*. T. c. pp. 28-30. [*Collembola*.]  
 —. [See also PLATEAU (1043).]

1417. WILLIAMSON, E. B. Notes on a few Wyoming dragon-flies. Ent. News Philad. xi, pp. 453-458, pl. ix. [*Odonata*.]  
 WILLISTON, S. W. [See GODMAN (511).]
1418. WOOD, J. H. On the larvæ, habits and structure of *Lithocolletis concomitella* Banks, and its nearest allies. Ent. Mag. xxxvi, pp. 30-34, 69-75, 102-106. [*Lepidoptera*.]  
 WOODHEAD, S. A. [See DAWSON & WOODHEAD (312).]
1419. WRIGHT, C. H. Oxen-born bees. Derby. Naturalist ii, pp. 19-21. [*Diptera*.]  
 Includes a translation from Virgil by the late R. D. BLACKMORE.  
 WULLSCHLEGEL, A. [See FAVRE (405).]  
 WULP, F. M. VAN DER, the late. [See GODMAN (511).]  
 [—]. Obituary, see SNELLEN (1251).  
 WYTSMAN, P. [See HÜBNER (620).]
1420. XAMBEU, —. Mœurs et métamorphoses des Insectes. 9<sup>e</sup> mémoire. Deuxième partie. Rev. Ent. franc. xix, pp. 1-56. [*Coleoptera*.]  
 For the first part of this 9th memoir see op. cit. xvii, 1898.
1421. YUNG, E. Dénombrement des nids de la fourmi fauve (*F. rufa* L.). Arch. zool. exp. Notes 1899, pp. xxxiii-xxxv. [*Hymenoptera*.]
1422. ZANDER, E. Beiträge zur Morphologie der männlichen Geschlechtsanhänge der *Hymenopteren*. Zeitschr. wiss. Zool. lxvii, pp. 461-488, pl. xxvii.  
 Summary by author in Zool. Centrbl. viii, p. 174.
1423. ZEHNTNER, L. De Riet-schorskever. *Xyleborus perforans* Wollaston. Arch. Java-Suikerind. 1900, 21 pp., 1 pl. [*Coleoptera*.]
1424. \*—. De Gallen der Djamboe bladeren. Bijbl. T. c. 1900, pp. 3-11. [*Psyllidæ*.]  
 Cf. Zool. Centrbl. vii, p. 671.
1425. —. Nieuwe parasieten der Boorders. T. c. Afl. 15, 13 pp., 1 pl. [*Hymenoptera*.]
1426. —. *Heteronychus* spec.? i. De Kentjong-kever. ii. Verdere waarnemingen omtrent den wāwālan. Mededeel. Proefstat. Oost-Java, n. s. No. 47, 1898, 24 pp., 1 pl. [*Coleoptera*.]
1427. —. Levenswijze en Bestrijding der Boorders. v. de paarsroode Boorder *Sesamia nonagrioides* var. *albiciliata*. vi. de bandong Boorder. Arch. Java-Suikerind. 1898, No. 15, 10 pp., 1 pl. [*Lepidoptera*.]
1428. —. De Mineerlarven van het Suikerriet op Java. iv. *Cosmopteryx pallifusciella* Snell., nov. spec. Mededeel. Proefstat. Oost-Java, Series 3, No. 4, 1898, 15 pp., 1 pl. [*Hymenoptera*, *Lepidoptera*.]
1429. —. De Plantenluizen van het suikerriet op Java. viii. *Aleurodes longicornis* Zehntn. ix. *Aleurodes lactea* Zehntn. Soerabaia 1899, 21 pp., 2 pls. [*Hymenoptera* and *Aleurodidæ*.]  
 This and the following are extracts from Arch. Java-Suikerind. 1899.
1430. —. .... x. *Ceratovacuna lanigera* Zehntn. 30 pp., 2 pls.  
 Natural history of this *Aphis* and various enemies of it.
1431. ZUBOWSKY, N. Beitrag zur Kenntniss der sibirischen *Acridiodeen*. Horæ Soc. ent. Ross. xxxiv, pp. 1-23. [*Orthoptera*.]

## II. BIOLOGY.

## SUBJECT-INDEX.

Biology of *Aphida*, MORDWILKO (924).

## 1. ANATOMY AND PHYSIOLOGY.

N.B. The arrangement in the subsections *a-g* of Anatomy and Physiology is of little importance as it will be noticed that each of them is not complete in itself.

**a. Morphology.** (See also "General," below.)

Homologies of appendages in the various classes of Arthropods, GARBOWSKI (489).

Morphology of *Collembola*, PROWAZEK (1058).

Morphology of male armature of *Hymenoptera*; supposed homology of male and female organs, ZANDER (1422).

Morphology of head; relations of *Insecta* and *Crustacea*, FOLSOM (433).

Morphology of the head, JANET (658), HEYMONS (592).

Folsom's views as to a superlingual segment, HEYMONS (593).

**b. General (comprehensive) and External.** (See also the other subsections for special systems or organs.)

General anatomy of *Nycteribiidae* and *Streblidae*, SPEISER (1261, 1262).

Structure of *Cecidomyiidae*, larva and imago, KIEFFER (704).

External structure of larva of *Blepharocera*; mouth-parts and double eyes of imago, KELLOGG (684).

Mouth-parts of *Liponeura* (*Diptera*, *Blepharoceridae*), KELLOGG (685).

General work on the structure and development, embryonic and post-embryonic, of *Chironomus*, MIALL & HAMMOND (907).

Anatomy of larva and imago of *Culicidae*, GILES (508).

Anatomy of *Brachytripes achatinus*, peculiar Malpighian tubes, BORDAS (149).

Structure of *Lonchoptera* larva (*Diptera*), DE MEIJERE (886).

Internal anatomy of *Trichopsocus dalii*, RIBAGA (1112).

Comparative anatomy of base of leg, WALTON (1372).

Ptilinum of *Diptera*, WESCHÉ (1406).

Retractile thoracic processes in larva of *Eriocampa*, CHAPMAN (239).

Comparative anatomy of thorax of *Formicidae*, EMERY (369).

Terminal excretory tube of *Membracidae*, GREEN (526).

The wings of *Coleoptera*, KEMPERS (687).

Nomenclature of nervures of *Lep.*, GROTE (533).

Arrangement and function of Androconia of *Lycena*, KÖHLER (743).

Peculiar hairs of *Ponerine* larvae, WHEELER (1407, 1408).

Claws and pulvilli of *Diptera*, KIEFFER (708).

Nucleolar structures of hypodermal cells, MONTGOMERY (922).

**c. Nervous System, Sense-Organs.** (See also **b.** For Senses, Psychology, Habits, see p. 85.)

Nervous system, Histology, TIRABOSCHI (1323).

Experiments by removal of ganglia, PROWAZEK (1059).

Oesophageal ganglia and nerves of *Orthoptera*, BORDAS (147).

The ocelli of *Insects*, REDIKORZEW (1076).—Ocelli of adult, KOCHI (739).

Eyes and ocelli, morphological relations, HEYMONS (589).

Double eyes, RÁBL (1069).

Vestigial eyes of *Attaphila*, WHEELER (1412).  
 Histology of eyes of *Ephemerida*, CIACCIO (259).  
 Physiology of curvature of the compound eyes, RÁBL (1068).  
 Optic tract, structure and function, RÁBL (1069).

**d. Muscular System.** (Histolysis of muscles, see 3.)

**e. Nutrition** (incl. Circulatory and Respiratory Organs, Glands, Excretion). See also g.

Histology and Physiology of digestive organs of *Periplaneta* and *Blatta*, PETRUNKEWITSCH (994).

Circulatory and lymphatic system of *Blatta*, KULWETZ (788).

Alimentary canal of *Brachytrupes*, *Gryllida*, BORDAS (149).

Alimentary canal and epithelium of *Gryllida*, LÉGER & DUBOSCQ (810, 811, 812).

*Gregarinida* in alimentary canal, LÉGER & DUBOSCQ (812).—Protozoic parasites in alimentary canal of *Blaps*, LÉGER & HAGENMULLER, Arch. zool. exp. Notes 1900, pp. xl-xlv.—The regular presence of fungi in epithelium of alimentary canal of a beetle, ESCHERICH (383).

Epithelium of *Chironomus* alimentary canal, VIGNON (1357).

Vibratile cilia, HEYMONS (590); see also g.

Intestinal secretion in *Gryllida*, LÉGER & DUBOSCQ (811).

Dorsal vessel of larva, *Diptera*, PANTEL (978).

Heart-cords as excretory organs, blood-tissue of larvæ, BENGTSSON (94).

Malpighian tubes in larva and adult of *Coleoptera*, PEYERIMHOFF (998).

—Malpighian tubes of *Stratiomys* larva, VANEY (1349).—Malpighian tubes of *Phasmida*, structure and function, SINÉTY (1219).

The excretion of carbonates by Malpighian tubes, VANEY (1350).

The respiratory appendages of *Donacia* larvæ, SANDERSON (1147).

Respiration of *Odonata* nymphs, EAST (366).

Respiratory structures of larva and nymph of *Bruchus*, SEURAT (1206).

—Respiratory structures and trophi of Dipterous larvæ, VOGLER (1360).

Respiratory and oral structures of early stages of *Teichomyza*, VOGLER (1359).

Respiratory system of *Chrysis* larva, SEURAT (1206): of *Tryphon* larva, SEURAT (1207).

Tracheal dilatations in legs of *Butacomorpha*, BRUES (185).

Origin of intracellular tracheæ, PRENANT (1055).

Spiral fibre of tracheæ, MERLIN (897).

Respiration in egg, QUAJAT (1066).

Cause of death of mosquitoes by oil or petroleum, LAVERAN (799).

Anatomy and histology of pygidial glands (bombarding apparatus) of *Pheropsophus*, DIERCKX (317).

Fat-body and oenocytes, particularly of *Apis*, KOSCHEVNIKOV (769).

Sexual glands, see f.

**f. Sexual organs and Sex** (incl. Hermaphrodites).

The disposal of superfluous Spermatozoa by the female organisation, HANDLIRSCH (559).

Production of males of *Apis*, BLOCHMANN (129).

Determination of sex in parthenogenetic and some other insects, CUÉNOT (304).

Inequality of numbers of sexes and periodicity in *Coccida*, REH (1063).

Males only of *Colias* in Ireland in 1899, CRUTTWELL, p. 1, FLEMING, p. 28, Ent. Mag. xxxvi.

Male and female sex organs of *Parnassius*, CHOLODKOVSKY (249).

Testis and ovary, *Phasmida*, SINÉTY (1220).



The male organs of *Coleoptera*, BORDAS (144).—Anatomy of testes of *Coleoptera*, BORDAS (143).—Testes and accessory glands of *Coleoptera*, BORDAS (145).—Male sexual glands, *Chrysomelidae*, BORDAS (146).—Male genital organs of *Longicorn Coleoptera*, SEURAT (1203).

Structure and development of male genital armature of *Rhopalocera*, KLINKHARDT (736).—Anatomy of ♂ genital armature of *Eupithecia*, SCHRÖDER (1163).—Male genitalia of *Zonosoma* (Lep.), BASTELBERGER (79).—The male genital structures of *Microlepidoptera*, STITZ (1285).—♂ genitalia of *Lithocolletis*, an additional piece, WOOD (1418).

Internal sexual organs ♂ *Zaitha*, MONTGOMERY (921).

Male structures, *Chermes*, CHOLODKOVSKY (248).

Copulatory structures of *Apis mellifica* ♂, MICHAELIS (908).

Structure and development of ovary of *Culex*, LÉCAILLON (806).

Ovary and oogenesis of *Campodea*, LÉCAILLON (804).—Of *Machilis*, LÉCAILLON (805).

Morphology of ovipositor of female longicorn *Coleoptera*, SEURAT (1204).

Spermatogenesis, *Staphylinus* and *Cetonia*, HOLMGREN, pp. 147, 148 Ent. Tidskr. xxi.—In *Anasa tristis*, PAULMIER (980).—In *Aceridiidae*, M'CLUNG (879), in *Locustidae*, SUTTON (1297).

Differentiation of cell elements in ovary of *Apis*, PAULCKE (979).

Oogenesis, *Dytiscus*, SAINT-HILAIRE (1146).

Oogenesis; folding of epithelium of the egg-follicles in *Rhizotrogus solstitialis*, RABES (1067).

Primary and secondary sexual characters, gynandromorphism, TUTT (1344).

Use of terms "Schein-Zwitter," and "Schein-Gynandromorph" advocated, SCHULTZ, p. 136, Illustr. Zeitschr. Ent. v.

Hermaphrodites: SCHULTZ (1165); of *Pterostichus maurus*, STIERLIN, p. 222, Mt. Schweiz. ent. Ges. x; of *Pepsis*, FRIESE (459); of *Podalirius retusus*, MORICE, p. xiv, P. ent. Soc. London 1900; Gynandromorph *Chlorippe vacuna*, STICHEL, Berlin. ent. Zeitschr. xlv, SB. p. 57; and p. 146, pl. ii, f. 1, Berlin. ent. Zeitschr. xlv; *Argynnis paphia*, URWICK, p. 266, Entomologist xxxiii; *Argynnis paphia*, gynandromorph, URWICK, p. 242, Ent. Rec. xii; of *Argynnis paphia*, HÖRNLEIN, Berlin. ent. Zeitschr. xlv, SB. p. 47; Hermaphrodite *Argynnis paphia-valezina*, URWICK, p. 240, Ent. Mag. xxxvi.

Gynandromorph *Lethe sura*, p. 163, pl. cc, figg. 5, 6, and *Cirrhochroa aoris*, p. 168, pl. dd, figg. 12, 13, NICEVILLE, J. Bombay Soc. xiii.—*Lycena adonis*, colour hermaphrodite, GOSS, p. 208, Ent. Mag. xxxvi.—Hermaphrodite *Smerinthus populi*, FRINGS, p. 52, Soc. ent. xv; *Ematurga atomaria*, LAHN, p. 235, Illustr. Zeitschr. Ent. v.

♀ with ♂ antennæ, WEBSTER & MALLY (1390).

### g. Physiology. (See also subsections a—f, and 2, 3, 4.)

Food and external conditions as influencing the life-cycles of *Chermes*, CHOLODKOVSKY (247).

Regeneration, BORDAGE (139, 140).—Mode of regeneration of mutilated limbs, BORDAGE (142).—Regeneration by spiral growth, BORDAGE (141).

Regenerated legs on a *Phasmid*, *Heteropteryx dehaani*, WEELE, Tijdschr. Ent. xliii, Versl. p. 26.

Luminosity, luciferase and luciferine, DUBOIS (350).

Physiology of metamorphosis, BATAILLON (80); MESNIL & METCHNIKOFF (899); GIARD (500); in *Diptera*, BERLESE (103); Histolysis and Phagocytosis, see 3.

Physiology of secretion; alimentary canal of *Chironomus*, VIGNON (1356).

Insects in salt lakes, FLORENTIN, (430).

- Influence of coloured rays on colour of pupa, KATHARINER (682).  
 Origin of partial albinism of *Lepidoptera*, KATHARINER (681).  
 Physiology of pigmentation in *Schistocerca*, KÜNCKEL (789).  
 Temperature experiments, STANDFUSS (1265); Temperature experiments on *Lepidoptera*, FRINGS (460); on *Vanessa*, FISCHER (420); Account in French of Standfuss' temperature experiments, STANDFUSS (1266).  
 Relation of temperature to physiological processes of the body-fluid, BACHMETJEW (50).—Relation of cold to the production of temperature varieties, BACHMETJEW (51).—Influence of season on resistance to low temperatures, BACHMETJEW (53).—Injury to *Lepidoptera* by high temperature, BACHMETJEW (54).  
 Function of crop during metamorphosis as accumulator of materials for cocoons etc., FABRE (285), p. 213.  
 Cilia, vibratile and not vibratile, BORDAS (148); want of motility due to progressive chitinisation, GIARD (501).  
 Progression of subterranean larvæ, BOURGEOIS (161).  
 Voice-organ of *Acherontia*, AIGNER (13).  
 Supposed odoriferous organ in *Coleoptera*, SEIDLITZ (1187).  
*Aphide* continuing viviparity during severe winter, JOHNSON (667).  
 Viviparous and oviparous *Oreina*, CHAPMAN, p. xiv, P. ent. Soc. London 1900.—Viviparity of *Strebliæ*, SPEISER (1263).  
 Imperfect second broods of *Lepidoptera*, discussion, Berlin. ent. Zeitschr. xlv, SB. p. 20.  
 Physogastry in Termitophilous Insects, WASMANN (1378).  
 Dwarfing of *Rhopalocera*, due to parasites?, RUSSELL, p. 129, Entomologist xxxiii.  
 Longevity of *Akis* and other *Tenebrionidæ*, LAUFFER, pp. 252–254, Act. Soc. Espan. 1900.  
 Senility in *Coleoptera*, KOLBE (753).  
 Stridulatory organs, see 2.  
 Parthenogenesis of *Bacillus*, DOMINIQUE (343); CHURCHEVILLE (258).—Parthenogenesis and thelytochy of *Bacillus rossii*, REY, Berlin. ent. Zeitschr. xlv, SB. p. 49.—Parthenogenesis and thelytochy in *Phasmidæ*, SINÉTY (1217).—Parthenogenesis and determination of sex, CUÉNOT (304).  
 Parthenogenesis in *Cimex* and other *Tenthredinidæ*, VAN ROSSUM, Tijdschr. Ent. xliii, Versl. pp. 51–56.—Parthenogenesis in honey-bee, LECHNER, Tijdschr. Ent. xliii, Versl. pp. 56–58 and WEISMANN (1404).  
 Reared parthenogenetic larvæ of *Cimex* and other *Tenthredinidæ*, VAN ROSSUM, Tijdschr. Ent. xliii, Versl. pp. 14–20.—Pigmentation, coloration, see Colour, p. 91.

## 2. HABITS, INSTINCT, including SENSES, PSYCHOLOGY. (Organs of Sense, see p. 82.)

- Experiments on the attraction for Insects of coloured stuffs and brilliant objects, PLATEAU (1042).  
 Senses and psychology, FOREL (434).—Mind and action, WASMANN & UEXKÜLL (1381).—Psychology, SCHOENICHEN (1157); psychology: capacity of learning, WASMANN (1380).—Bees as reflex-machines, experiments, BUTTEL-REEPEN (212, 213).—Instinct or reason? *Hymenoptera*, PECKHAM & PECKHAM (982).—Psychology of bee, NETTER (936A).—Psychology of Ants, BETHE (114).  
 Habits of Indian *Sphæx* and *Pompilidæ*, BINGHAM (121).—Habits of a bee, *Eucera*, ALFKEN (17).—Instinct of *Apis mellifera*, ♀, GALE (483).—Habits and instinct of fossorial *Hymenoptera*, ADLERZ (11).  
*Bembex*, return to nest, BOUVIER (165).—*Pompilus*, return to nest, MARCHAL (853).

- Labour-saving instinct, STOYEL (1286).  
 Habits of fossorial *Hymenoptera*, Denmark, NIELSEN (943).  
 Variety of Instinct in *Bembex*, FERTON (418).  
 Habits and nests of wasps in Madagascar, DE SAUSSURE (1149).  
 Wasps in captivity, ROSSI, p. 385, *Illustr. Zeitschr. Ent. v.*  
*Vespa vulgaris*, prolonged activity, MOFFAT, p. 47; BARRINGTON, p. 108, *Irish Natural. ix.*  
 Habits of ants, FOREL (439), REICHENBACH (1089).—Habits of *Eciton*, WHEELER (1409).—Habits of primitive Ants, WHEELER (1407, 1408).  
 Relations of *Strongylognathus huberi* and *Tetramorium caespitum*, FOREL, pp. 273-276, *Mt. Schweiz. Ent. Ges. x*; of *Polyergus* with *F. fusca* and *pratensis*, *id. t. c.*, pp. 280-282.  
 Finding nest, ants, VIEHMEYER (1355).  
 Ant using larva for web-spinning, GREEN (520).  
 Founding new nests, *Atta sexdens*; fat workers of *Camponotus*, EMERY (374, p. 129).  
 Brief notes on habits of *Formicidae* and *Termitidae* in W. Africa, CLEMENTS (1300).  
 Ant-dwellings in East Africa, KANNENBERG (671).  
 The licking of *Paussus* by Ants, ESCHERICH (384).  
 Ergatoid females of ants, WHEELER (1407, 1408).  
 Nests of Madagascar *Vespidae*, SAUSSURE (1149).—Nests of *Hymenoptera*, RUDOW (1142).  
 Burrows of *Colletes*, 5 feet deep, SMITH, p. 208, *J. N. York Ent. Soc. viii.*  
 Vegetarian habits of *Dorylus orientalis*, GREEN, p. 39, *Ind. Mus. Notes v.*  
 Habits and Instincts of various *Coleoptera*, eggs and oviposition, the making of cases by *Psychida*, *Clythrines*, assembling of *Bombycida*, the foam of *Aphrophora*, FABRE (386).  
 Parents caring for offspring during larval life, in *Passalidae*, OHAUS (956, p. 165), in *Cassidides*, *id. t. c.* (956, p. 230).  
 Supposed change of habits of *Phyllotrochus macleayi*, GIARD, p. 182, *Bull. Soc. ent. France 1900*.  
 Habits of *Scolytidae*, KNOTEK (737).—Habits of *Xyleborus*, BELLEVOYE (91).  
 Longicorn *Col.*: preparing for young, BOAS (130).  
 Defensive mimetism of *Ranatra*, PLATEAU (1044).  
 Habits of *Termes carbonarius*, ERRINGTON (379).  
 Concerted sounds of Termites and Ants, GOUNELLE (515).  
 Variation in habits of members of one colony, *Philanthus*, BOUVIER (166).  
 Biology of *Cecidomyiidae*, KIEFFER (704).  
 Oviposition of par. *Hym.* in Cockroach's eggs, SURVEYOR (1296).  
 Parasitic *Lep.* in Lepidopterous nest, JOANNIS (664).  
*Vanessa io* and *urtica*, hibernating in a Church bell, GAYTHORPE, p. 559, *Zoologist 1900*.  
 Earth cocoons formed by exudation, not spinning, SOULE (1256).  
 Modes of copula of *Coleoptera*, GADEAU (476).—Copula of *Collembola*, LIE-PETTERSEN (822).—Pairing of *Vanessa urtica* and *Epinephole ianira*, VAUGHAN, p. 224, *Entomologist xxxiii.*—Copulation of males of *Bombyx mori* and *Oenaria dispar*, THURAU, p. 190, *Ent. Nachr. xxvi.*  
 Protective habits of some *Lepidoptera*; poison-spines, BARRETT (73).  
 Habits of *Hepialidae*, QUAIL (1061).—Of *Psychida*, VAYSSIÈRE & BORDAS (1353).—Habits, copula, oviposition, etc., of *Acanthopsyche opacella*, CHAPMAN (237).—Case formation by *Psychida*, FABRE (386).—Portable cases of *Lepidoptera Lacosomidae*, DYAR (358).—Habits of *Phorodesma smaragdaria* larva, clothing, etc., BURROWS (204).—Habits of *Orthoptera*, ANNANDALE (33).—Habits of mimetic *Mantida*, and other Insects, sounds,

leaping, ANNANDALE (32).—Habits of *Forficulidæ*, and *Blattidæ*, DISTANT (321).—Habits of *Mantis religiosa*, STICHEL, Berlin. ent. Zeitschr. xlv, SB. p. 4.—Tunnels and nest of *Gryllotalpa*, ROSSINSKY (1132).

Socialism in young of *Rhomalea miles*, OHAUS, p. 233, Ent. Zeit. Stettin lxi.

*Aeschna cyanea*, natural history notes, EAST, pp. 257–259, Entomologist xxxiii.

Habits of arboreal *Aphidæ* in Britain, GILLANDERS (509).

Oviposition and egg of *Hydrometra*, MARTIN (864).—Ovipositing of *Vanessa antiopa*, WEEKS (1392).

Census of a nest of *Formica rufa*, YUNG (1421).

Selection by male, SEEBOLD (1186).

Experiments as to mating in *Lepidoptera*, MAYER (872, 873).—Assembling, *Smerinthus tiliaæ*, CARTER, p. 202, Entomologist, xxxiii.

Use of the antennæ of sexes in *Meloë*, SCHOLZ, p. 217, Illustr. Zeitschr. Ent. v.

Odoriferous organs in *Coleoptera*, BRANDES (170).

The double eyes of *Blepharocera capitata*, KELLOGG (684).

Erroneous instinct, MOFFAT (915).—Aberration of instinct in *Polistes*, SHARP (1208, p. 388).

Tendency of beeswax to assume hexagonal form when heated, DAWSON & WOODHEAD (312), CHAPMAN (236).

Migration and dispersal of *Lepidoptera*, TUTT (1345).—Migration of *Euplœa core* and weather, AITKEN (14).—Migration of *Pieris brassicae*, KRÜGER, p. 299, Illustr. Zeitschr. Ent. v.—Migration of *Odonata*, LUCAS (833).—Migrations of *Libellula*, McLACHLAN (878).—Swarm of *Libellula*, Ent. Nachr. xxvi, p. 253.

Aphid migrations, THIELE (1320).—Swarming of winged *Psoidea*, Ent. Mag. xxxvi, p. 43.—Wholesale destruction by drowning, NEEDHAM (935).

*Halias prasinana* producing sound, FREEMAN, p. 247, Entomologist xxxiii.

Cry of larva of *Acherontia atropos*, LAMBILLION, p. 295, Ent. Rec. xii.

Stridulating organs in *Coleoptera*, GAHAN (478).—Stridulating organs of *Philus antennatus* (Col. Long.), GAHAN (482).—Stridulatory organs of *Passalide* imago and larva, OHAUS (956, p. 167), of various lamellicorn larvæ, OHAUS (956).—Stridulation of *Hemiptera*, HANDLIRSCH (554).—Stridulation of *Hemiptera*, the views of Swinton, Garner, Frisch and others, stridulation of *Naucoris*, HANDLIRSCH (555).

*Filarii* in *Lepidoptera*, SCHULTZ (1166).

Fungus-gardens of W. African Termites, FAIRCHILD & COOK (388).—

Termites and fungi, FAIRCHILD & COOK (388), HOLTERMANN (598).—

*Lasius fuliginosus* and its fungus, rearing, LAGERHEIM (790).

Habits of ants and ant-lions, NAVÁS (934).

Symbiosis of ants and guests, MACKENZIE (846).

Myrmecophilous and Termitophilous Insects, WASMANN (1382).—Myrmecophilous and Termitophilous *Coleoptera*, PÉRINGUEY (989).—Myrmecophilous Col., DONISTHORPE (346), LEA (803), WASMANN (1377, 1379), WHEELER (1409), WICKHAM (1414).—*Dinarda dentata*, habits, DOUGLAS, p. 11, Ent. Mag. xxxvi.

Ants and *Hemiptera*, GREEN (526).—Ants'-nest *Homopteron*, MELICHAR, p. 238, Wien. ent. Zeit. xix.—Ants'-nest *Coccidæ*, NEWSTEAD (940).—Myrmecoph. *Blattid*, WHEELER (1412).—*Myrmecophila* and ants, WHEELER (1413).

Termitophilous Col., BRAUNS (171).—*Cicindelidæ* and Termitariophily, BERG (98).—Termitophilous *Diptera*, WASMANN (1378).

Cave Insects, GESTRO (495), SKORIKOW (1226); Bohemian Cave-insects. *Thysanura*, ABSOLON (6); Cave *Collembola*, ABSOLON (8, 9, 10); *Bathyscia*, ESCALERA (380); Cave *Orthoptera*, ANNANDALE (1 and blind Col., DODERO (335).



Blind *Col.*, LEA (803).

*Staphylinidae* living on *Rodentia*, FAUVEL (399).—Epizoic *Col.*, KRAATZ (767); Epizoic Insects, SPEISER (1261, 1262).

Salt springs, *Coleoptera*, BRUYANT & EUSÉBIO (190).—*Chironomid* in salt water, KIEFFER (706).—Maritime fly, KELLOGG (683).

### 3. DEVELOPMENT.

Relation of primary and secondary male structures in development, WOOD (1418, p. 103).

The germinal layers, formation in *Muscidae*, ESCHERICH and others (382).

Development of mouth parts, and general morphology of the head and its appendages, FOLSOM (433).

Relation of larval and imaginal anocytes, KOSCHEVNIKOV (759).

Embryological notes on *Anisolabis litorea*, HEYMONS (588).

Embryology of a Termite, origin of mesoderm and amnion of Insects, KNOWER (738), HEYMONS (591).

Embryology of *Collembola*, PROWAZEK (1058).

Embryology of *Melophagus ovinus*, origin of imaginal discs, PRATT (1054).

Cycles of development of an *Aphis*, *Mindarus abietinus*, NÜSSLIN (948); *Pemphigus poschingeri*, NÜSSLIN (949).

Development of *Chironomus*, MIALL & HAMMOND (907).

Development of ovary of *Culex*, LÉCAILLON (806).

Relations between larval and abdominal legs of *Lepidoptera*, CHAPMAN (238).

The moult to pupa in *Pterophorus*, CHAPMAN (240).

Postembryonic development of wings of *Lepidoptera*, MERCER (896).

Development of nervuration in *Acanthopsyche*, CHAPMAN (237).

Embryonic and postembryonic development of trophi and alimentary canal of *Hydrophilus*, DEGENER (313).

Malpighian tubes in larva and adult of *Coleoptera*, PEYERIMHOFF (998).

The pupal moult of *Dermestes lardarius*, GÜNTHER, Berlin. ent. Zeitschr. xlv, S.B. p. 12.

Metamorphosis, TUTT (1343); Metamorphosis of *Lepidoptera*, TUTT (1340).

Metamorphosis of a beetle; development of wings; fat-cells and muscle; phagocytosis, NEEDHAM (936).

Development of elytra and wings of *Doryphora*, TOWER, p. 96, Psyche ix.

Development of shield, ecdysis in *Aspidiotus*, REH (1084).

Life-history of *Aspidiotus perniciosus*, REH (1085).

The process of phagocytosis, BERLESE (104), ROUGET (1138), Phagocytosis, TERRE (1308), Phagocytosis in metamorphosis of *Diptera*, VANEY (1348); Phagocytosis and histolysis, PEREZ (985), TERRE (1307); Histolysis of muscles of *Hymenoptera*, TERRE (1310); Histolysis of fat-body of *Muscidae*, HENNEGUY (582); Histolysis and histogenesis of fat-body of *Calliphora*, SUPINO (1293), BERLESE (103), SUPINO (1294); Metamorphosis, changes in fat-body, SUPINO (1293); Histolysis of fat-body of bee, TERRE (1309, 1311), see also Physiology.

Metamorphosis of internal organs; lycocytosis, ANGLAS (30); lycocytosis, ANGLAS (31).

Metamorphosis not immediately dependent on development of sex-organs, BATAILLON (81), GIARD (501), TERRE (1311).

## 4. GENERAL SUBJECTS.

## Variation and Teratology.

Results of crossing two varieties, SEEBOLD (1186).

Variation in hybrid *Biston hunii*, OBERTHUR (952).

Peculiar variation of *Charaxes*, ROTHSCHILD & JORDAN, Nov. Zool. vii, pp. 324, 477 etc.

Progressive melanism of various *Lepidoptera* at Düsseldorf, BREIT, pp. 73, 74, Soc. ent. xv.

Melanic varr. of *Lep.* in Lancashire, FREEMAN, p. 245, Entomologist xxxiii.

Melanistic alpine forms, SCHULZ, Berlin. ent. Zeitschr. xlv, SB. p. 11.

Experiments as to production of varieties of *Vanessa* [omitted in 1896], FISCHER (420).

Some varr., including teratological specimens, of *Lep.*, GOUIN (514).

Variation of British *Lepidoptera*, C. OBERTHUR (950).

Varr. of European *Lepidoptera*, STICHEL (1282).—Extensive list of varieties of European *Macrolepidoptera*, AGASSIZ (12).

Varr. of Brit. *Lep.*, figured, *Vanessa*, *Argynnis*, *Lycæna*, *Bombyx*, *Arctia*, FROHAWK (470).

Notes on varieties of *Rhopalocera* in Kurland, SLEVOGT (1230).

Four arctic varr. of *Lep.*, STRAND (1287).

Varr. of *Papilio machaon*, GAUCKLER, p. 103, Deutsche ent. Zeitschr. Lep. xiii.—Var. of *P. machaon*, STICHEL, Berlin. ent. Zeitschr. xlv, SB. p. 55.—*Papilio machaon* var., PETERSDORF, Berlin. ent. Zeitschr. xlv, SB. p. 44.—Varr. of *Papilio machaon*, VAN ROSSUM etc., Tijdschr. Ent. xliii, Verslag, pp. 47, 48.—Varieties of *Papilio podalirius* & *machaon*, SCHULTZ, pp. 57, 58, Soc. ent. xv.—Variation of *Ornithoptera cræsus*, FRUHSTORFER, pp. 197, 198, Illustr. Zeitschr. Ent. v.—Var. of *Parnassius apollo* or *delius*? FRUHSTORFER, Berlin. ent. Zeitschr. xlv, SB. p. 18.—*Parnassius apollo* varr., STICHEL, Berlin. ent. Zeitschr. xlv, SB. pp. 36–38, cuts.—Variation of *Zeritis thyse*, FELTHAM (413).—*Rhodocera rhamni* var. *pseudorhamni*, FRUHSTORFER, Berlin. ent. Zeitschr. xlv, SB. p. 13.—Seasonal dimorphism of *Pieris* in Rhineland, FRINGS, pp. 163, 172, Soc. ent. xiv.—*Pieris rapæ*, varr. *mannii*, *bryonia*, note on, HENSEL, Berlin. ent. Zeitschr. xlv, SB. p. 1.—*Pieris napi* melanistic var., BURGER, p. 330, Illustr. Zeitschr. Ent. v.—*Teracolus evippe* variation, SUFFERT, Berlin. ent. Zeitschr. xlv, SB. p. 2.

*Argynnis pales*, *Erebia tyndarus* etc., varr. near the Brenner Pass, GALVAGNI (484).—*A. pales* variation, HENSEL, Berlin. ent. Zeitschr. xlv, pp. 41, 42.—Var. of *A. adippe*, SOUTH, p. 281, cut, Entomologist xxxiii.—*A. aglaia*, var. *charlotta*, STANDEN, p. 350, Entomologist xxxiii.—Var. of *A. aglaia*, SABINE, p. 303, Entomologist xxxiii.—Varr. of *A. selene*, *aglaia*, TER HAAR, pp. 242–246, Tijdschr. Ent. xliii.—Var. of *A. dia*, MERRIFIELD, p. xviii, P. ent. Soc. London 1900.

Varr. of *Melitæa didyma*, *parthenis*, OBERTHUR (953).

The melanistic var. *f-album* of *V. c-album*, STICHEL, Berlin. ent. Zeitschr. xlv, SB. p. 44.

Variation in pupa of *Eugonia j-album*, DURAND, p. 87, Psyche ix.

*Canonympha pamphilus* var., CARTER, p. 248, Entomologist xxxiii.—Varr. of *Pararge maera*, JONES, p. xv, P. ent. Soc. London 1900.—Varr. of *Polysommatus doris*, OUDEMANS, p. 23, Tijdschr. Ent. xliii, Ver. and TER HAAR, p. 236, Tijdschr. Ent. xliii; of *P. hippothoe*, id. t. c. pp. 240–242.—*Polysommatus*, varr. including *dispar*, HENSEL, Berlin. ent. Zeitschr. xlv, SB. p. 46.—*Lycæna argiades*, var. *decolorata* *inflata*.

ZAKI, p. 83, Soc. ent. xv.—Var. of *L. bellargus*, SOUTH, p. 281, Entomologist xxxiii.

*Deilephila euphorbiae*, abnormal food and var., THURAU, Berlin. ent. Zeitschr. xlv, SB. p. 25.—Var. of *Deilephila euphorbiae*, THIELE & HENSEL, Berlin. ent. Zeitschr. xlv, SB. p. 50; PETERSDORFF, t. c. p. 51.—Var. of *Lasiocampa potatoria*, SCHULZ, Berlin. ent. Zeitschr. xlv, SB. p. 14.—*Macrobroschia leucospilota*, melanistic variation, FRUHSTORFER, Berlin. ent. Zeitschr. xlv, SB. p. 1.—*Callimorpha dominula*, var. *crocea*, SCHULTZ, p. 219, Illustr. Zeitschr. Ent. v.—Var. of *Spilosoma mendica*, BARRETT, p. xiii, P. ent. Soc. London 1900.—Variation of *Emydia cribrum*, SOUTH (1257).—The var. *eremita* of *Psilura monacha* due to heat, IRMSCHER, p. 166, Illustr. Zeitschr. Ent. v.—*Agrotis forcipula*, melanistic form, SCHULTZ, p. 369, Illustr. Zeitschr. Ent. v.—*Epunda luteolenta* variation, TUTT, p. xviii, P. ent. Soc. London 1900.—Melanic var. of *Axylophasia polyodon*, CROSS, p. 242, Ent. Rec. xii; FREER, t. c. p. 243.—Var. of *A. polyodon*, *A. cerago*, P. chi, DOBIE, p. 22, Rep. Chester Soc. xxix.

*Amphidasis betularius doubledayaria*, increase in Germany, UFFELN, p. 67, Deutsche ent. Zeitschr. Lep. xiii.—Proportions of var. *doubledayaria* and type *Amphidasis betularia*, DOBIE, p. 22, Rep. Chester Soc. xxix.—*A. doubledayaria* in the Harz, PAULS, p. 113, Soc. ent. xv.—Var. of *Oporabia autumnata*, PROUT (1057).—Variation of *Enconista miniosaria*, JOANNIS, pp. 189–191, cuts, Bull. Soc. ent. France 1900.—Var. of *Zonosoma pendularia*, THURAU, Berlin. ent. Zeitschr. xlv, SB. p. 21.—Var. of *Ematurgia atomaria*, *Bupalus piniarius*, *Lythra purpuraria*, THURAU, Berlin. ent. Zeitschr. xlv, SB. p. 28.—Var. of *Hydrocampa stagnalis*, KAYE, p. xviii, P. ent. Soc. London 1900.

Variation in Hawaiian *Coleoptera*, SHARP, p. 22, Fauna Hawaiiensis II; PERKINS, t. c. p. 121 etc.

Variation in *Cicindelidae*, HORN (604).

Corsican varieties of *Cetonia aurata*, HELLER (575).—Winged race of *Carabus italicus*, BORN, p. 185, Verh. Ges. Wien l.—Variation of *Porcinolus murinus*, a beetle, FLEISCHER, p. 179, Wien. ent. Zeit. xix.

Melanism in *Carabida*, FEUERSTACKE, p. 167, Illustr. Zeitschr. Ent. v.—Melanism in *Carabus auratus*, ZANG, p. 121, Illustr. Zeitschr. Ent. v.

Variation of *Bombus soröensis*, ALFKEN (19).

Dimorphism in wings of *Diptera*, MIK, pp. 143–145, Wien. ent. Zeit. xix.—*Achias longivirens*, variation in length of eye-stalks, JANSON, p. 1, P. ent. Soc. London 1900.

Occasional occurrence of Brachypterous condition in various *Psocida*, McLACHLAN, Ent. Mag. xxxvi, p. 6.

Var. of *Enallagma cyathigerum*, McLACHLAN, p. 110, Ent. Mag. xxxvi.—Var. of *Sympetrum flaveolum*, McLACHLAN, p. 209, t. c.—Macropterous form of *Xiphidium dorsale*, BURR, p. v, P. ent. Soc. London 1900.

Variation in nervuration of *Trimerotropis*, *Acridiida*, McNEIL (881).

Variation of individuals as to resistance to cold, BACHMETJEV (52).

A cause of malformations, CHAPMAN, p. xxiv, P. ent. Soc. London 1900.

Numerous cases of monstrosities in *Coleoptera*; their aetiology, TORNIER (1325).—Some monstrosities of *Coleoptera*, BRANCZIK (169).—Teratological *Coleoptera*, EHLMANN, pp. 619, 620, Ent. News Philad. xi.—Teratological leg in *Carabus catenulatus*, PREDIGER, Illustr. Zeitschr. Ent. v, p. 188.—Abnormal tarsus of *Callisthenes*, OTT, p. 218, Illustr. Zeitschr. Ent. v.—Abnormal abdomen in *Stenocorus fasciatus*, Col. Long., SCHOLZ, p. 298, Illustr. Zeitschr. Ent. v.—Abnormal structure of head in *Tenthredopsis*, KONOW, p. 117, Illustr. Zeitschr. Ent. v.—Teratological specimens of *Lepidoptera*, HAMPSON (549).—Some malformed *Lepidoptera*, OUDEMANS, Tijdschr. Ent. xliii, pp. 24–26.—Abnormal antenna in *Zygæna*, ? Homeosis, KLEMSIEWICZ (735).—*Lep.* with supernumerary antenna, OBERTHUR (951), GIARD (503).—*Lep.* with supernumerary tarsi and legs, BLEUSE (128), GIARD

(503).—Abnormal antennæ in *Hemiptera*, BROWN, p. 306, Bull. Soc. ent. France 1900; Abnormal antennæ of some *Hemiptera*, C. & M. ROYER, p. 252, Bull. Soc. ent. France 1900.

### Hybrids.

OBERTHUR (952).—Hybridisation experiments, STANDFUSS (1265).—Crossing different species of *Smerinthus*, PICKETT, p. 215, Ent. Rec. xii.—Hybrids of *Smerinthus*, STICHEL, Berlin. ent. Zeitschr. xlv, S.B. p. 29.—Hybrid *Clostera curtula, pigra*, NEWMAN, p. 295, Ent. Rec. xii.—Crossing species of *Selenia*, BARTEL, pp. 340–350, Ent. Nachr. xxvi.

### Colour.

Physiology of pigmentation in *Schistocerca*, KÜNCKEL (789).  
Origin of partial albinism of *Lepidoptera*, KATHARINER (681).  
Influence of colored rays on colour of pupa, KATHARINER (682).  
Production in pupa-shell of coloration of imago, FISCHER (421).  
Relations of colour in pupal and imaginal wings of *Aporia crataegi*, CHAPMAN, pp. xxiii, xxiv, P. ent. Soc. London 1900.  
Various coloured pupæ but not homochromy in *Papilio demoleus*, BORDAGE (139).  
White colour of Arctic *Collembola*, WAHLGREN (1361).  
Development of the pattern of *Machilis*, GIARDINA (506).  
Peculiar colour of Madagascar *Vespida*, SAUSSURE (1149).  
♂ and ♀ coloration mixed in a ♂ *Bupalus piniaria*, CHITTENDEN, p. 266, Entomologist xxxiii.

### Protection.

Protective-resemblance, WEEKS (1392).—*Rumia crataegata*, IMMS, p. 159, Ent. Mag. xxxvi.  
Destruction of butterflies by birds, RÖBER, p. 383, Illustr. Zeitschr. Ent. v; FRINGS, p. 76, Soc. ent. xv.—Destruction of hibernating *Vanessa* by the wren, ELLIOT, p. 53, Ann. Scott. Nat. Hist. 1900.—Butterfly killed by bird, SOPER, p. 491, Nature lxi.  
Destruction of *Lep.* by birds, URBECH, Illustr. Zeitschr. Ent. v, p. 314.—Birds and *Lepidoptera*, IRMSCHER, p. 75, Illustr. Zeitschr. Ent. v.  
Protection and edibility of pupa of *Aporia crataegi*, MERRIFIELD (898).  
Distastefulness of *Papilio machaon* larva, SCHULTZ, p. 56, Illustr. Zeitschr. Ent. v.  
The protective coloration of *Anthocharis*, CHAPMAN, p. 69, Entomologist xxxiii.  
Enemies of *Cicadidae*, YERBURY & DISTANT, p. 559, Zoologist 1900.  
Defensive mimetism of *Ranatra*, PLATEAU (1044).

### Resemblance.

Mimicry, ANNANDALE (32, 33), CUNNINGHAM (305), HUBERT (619), MARSHALL (859), SHELFORD (1215), REY & STICHEL, Berlin. ent. Zeitschr. xlv, S.B. pp. 52, 53, 60.  
Mimicry in *Pierida*, GROTE (536).—Mimicry in ants'-nest Insects, WASMANN (1377), WHEELER (1409).  
Mimicry and protective resemblance, their connection with psychology, DISTANT (332), MARSHALL (860), POULTON (1063).—Mimicry of *Kallima* etc., MOORE (923).  
Resemblance between two beetles, ALLUAUD (23).  
Curious resemblance between *Hymenopterum* and *Dipter* (1148).



Resemblance between *Caduga melaneus* and *Papilio macureus*, FRUHSTORFER, Berlin. ent. Zeitschr. xlv, SB. p. 3.

Resemblance between *Danaï chrysippus* and *Hypolimnas*, SUFFERT, Berlin. ent. Zeitschr. xlv, SB. p. 7.

*Bombus justus* and *Volucella facialis*, COCKERELL, p. 401, Ann. Nat. Hist. v.

*Culex* mimicking *Anopheles*, NOK (945).

Resemblance of *Hyperaspis* larva to *Coccid*, HOWARD, p. 18, Bull. U. S. Dep. Agric. ent. xxvi.

Resemblance between *Coccinella* and *Paropsis*, JACOBSON, p. ix, Annuaire Mus. St. Petersb. v.

*Mantispa* resembling a Braconid, McLACHLAN (876).

Resemblance of *Nabis lativentris* to ants, habits, MARCHAL (855).

### Phylogeny, Organogeny, Evolution, Heredity.

Relations of larva, imago and primitive forms, PEYERIMHOFF (997).

Morphology and classification of *Lepidoptera*, PETERSEN (993).

Aetiology of coloration, BRUNNER (188, 189).—Aetiology of coloration of *Lepidoptera*, MAYER (871).—Evolution of colour in *Lepidoptera*, PIEPERS (1037).—Phylogeny of *Rhopalocera*, QUAIL (1063).—Diphyletism of *Rhopalocera*, GROTE (535).

Phylogeny of Lepidopterous pupa, CHAPMAN (1340).

Phylogeny of *Pieride*; organogeny of nervures, GROTE (536).

Phylogeny of *Psychida* and *Lachneida*, TUTT (1340).

Ontogeny and phylogeny; colour-markings in *Coleoptera*, JACOBSON (641).

Malpighian tubes, their number and classificatory value in *Coleoptera*, PEYERIMHOFF (998).

Organogeny, wing nervures, GROTE (532).

Organogeny of Lepidopterous antenna, CHAPMAN (242).

Phylogeny: androconia of *Lycæna*, KOHLER (743).

Aetiology of temperature varieties of *Rhopalocera*, PIEPERS, Tijdschr. Ent. xliii, Versl. pp. 9-14.

Aetiology of absence of regeneration of posterior limbs in *Orthoptera saltatoria*, BORDAGE (139).

Aetiology of red & blue colours of wings of *Acridiida*, COCKERELL, p. 30, Nature lxii.

Natural selection and colour and pigments, POULTON (1052).

Nature, origin and use of the foam of *Aphrophora*, GRUNER (542), FABRE (386).

The adaptation of the leg of the mole-cricket, VANEY & COUTE (1351).

The horns of male *Plataspides*, KUHLGATZ (787).

Relation between form of wasp and that of nest, SAUSSURE (1149).

### Galls.

CANNON (226), COCKERELL (278), KIEFFER (705), KIEFFER & TROTTER (709), RÜBSAAMEN (1141), STEFANI (1274, 1275), TROTTER (1328), TRUCHOT (1329).

Galls on Tunisian oaks, SEURAT (1202).

Galls of *Cecidomyiida*, KIEFFER (704).

Galls of N. American *Cynipida*, BASSETT (76).

A gall-making *Coleophora*, WALSINGHAM, p. 59, Ent. Mag. xxxvi.

Norfolk galls, BLOOMFIELD, pp. 110-112, Tr. Norfolk Soc. vii.

### Insects and Flowers, and Plants.

Insects and flowers, PLATEAU (1041).

Bees and flowers, COCKERELL (275), LUDWIG (837)

- The fruiting of the blue flag (*Iris versicolor*), NEEDHAM (935A).  
 Fertilisation of *Aristolochia*, Ule's views, FRUHSTORFER, Berlin. ent. Zeitschr. xlv, SB. p. 9.  
*Orobanche* fertilised by wasps, MOFFAT, p. 181, HART, p. 212, Irish Natural. ix.  
 Entrapping of Insects by *Araujia albena*, SAUNDERS & GAHAN, p. xvii, P. ent. Soc. London 1900.  
 Relations between Insects and plants, ULE (1347).  
 Lepidoptera on *Dorycnium suffruticosum*, CHRÉTIEU (255).  
 Les Plantes de France leurs chenilles et leurs papillons, Naturaliste xxii, pp. 43 etc.  
 The fungus reared by *Lasius fuliginosus*, LAGERHEIM (790).  
 Cordyceps on *Cicada*, BENHAM (96).

### Collections, Preservation, Museums, Nomenclature.

- The value of types, VERRALL (1354).  
 Entomological portions of a College Syllabus, FERNALD (417).  
 Mode of observing ants in confinement, WHEELER (1408).—Portable artificial ant cages, FIELDE (419).  
 Cement for broken Insects, STRICKLAND, p. 190, Ent. Mag. xxxvi.  
*Coccide*, Improved mode of preparing and mounting, GREEN (520).  
 Treatment of chitin for the microtome, HENNINGS (583).  
 Rearing dragon-flies, NEEDHAM, pp. 38–40, Ent. Mag. xxxvi.  
 Relaxing, *Lepidoptera*, WOODFORD, p. 12, Entomologist xxxiii and BEAULAND, l. c.  
 Hints for rearing larvæ of *Lepidoptera*, F. H. FOSTER, pp. 461, 462, Ent. News Philad. xi.  
 Treatment of "grease" in *Lepidoptera*, BASTELBERGER (78).  
 Mode of rearing Coleopterous larvæ; cages etc., implements for collecting, OHAUS (956, pp. 205, etc.).  
 Preserving Coleopterous larvæ in formalin, OHAUS (956, p. 207).  
 Formalin as a preservative, ZEHNTNER, p. 216, Illustr. Zeitschr. Ent. v, and GILLER, p. 90, Entomologist xxxiii.  
 Collecting and collections of *Coleoptera*, WALKER (1364).  
 Artificial alteration of colours of *Rhopalocera*, DÖNITZ, Berlin. ent. Zeitschr. xlv, SB. pp. 2, 3.  
 Net with removable end for *Diptera*, etc. WINGATE, pp. 162–164, Naturalist 1900.  
 List of types of *Lepidoptera* in the Strecker collection, 425 spp., STRECKER (1289).  
 LABOULBÈNE & DUFOUR collections to the Paris Museum, Bull. Mus. Paris 1899, p. 263.  
 Walcott collection of Aculeate *Hymenoptera*, Notes on, PERKINS, pp. 172–174, Ent. Mag. xxxvi.  
 R. H. Meade's *Diptera* in the Yorkshire College, Ent. Mag. xxxvi, p. 136.  
 The Ulke collection of *Coleoptera* in the Carnegie Museum, Science xii, pp. 918–920.  
 The "Schill collection" of *Lepidoptera* in the Manchester Museum, Ent. Mag. xxxvi, p. 240.  
 Sale of Samuel Stevens collection, Entomologist xxxiii, pp. 155 etc.  
 The validity of a generic name given under an erroneous impression, COCKERELL (270).  
 Priority, ~~genotypes~~ etc., KIRKALDY (729).

### Bibliography.

- E. Candèze, list of writings, FRAIPONT (443).  
 C. Duméril, note on his works, OSTEN-S.

Entomological writings of G. D. Hulst, BEUTENMÜLLER, pp. 251-254, J. N. York Ent. Soc. viii.

M'Leay the author of the *Lepidoptera* in Lewin's Nat. Hist. Ins. N.S.W., WALSHINGHAM, p. 549, SWINHOE, Cat. Lep. Het. II.

RATHAY EMERICH, list of his writings, cf. Wien. ent. Zeit. xix, p. 25.

Records; LUCAS (830, 831), SEIDLITZ (1189, 1190), MAYER (874).—Record of Swiss. ent. literature, January 1898—May 1900, STECK, pp. 291-296, Mt. Schweiz. ent. Ges. x.

Bibliography of clinical entomology, HUBER (618).

The date of Schiffermüller & Denis, PROUT (1056).

Systematic Index to 40 vols., Ann. Mus. Genova, DORIA & GESTRO (347).

Lintner's work, Alphabetical Index to, FELT (408).

Termitid literature, bibliography of, SJOSTEDT (1221), pp. 223-234.

*Streblidae*, bibliography of, SPEISER (1262), of *Nycteribiidae*, id. (1262).

*Cecidomyiidae*, bibliography, KIEFFER (705).

N. American bibliography, BANKS (62).

S. American *Diptera*, List of works on, HUNTER (630).

Determination of sex, bibliographic list, CUÉNOT (304).

Wasmann's works, supplement to list of, Zool. Jahrb. Syst. xiv, pp. 286, 287.

### Biography.

Prix Thore awarded to M. SEURAT for his studies of development of parasitic *Hymenoptera*, C.R. Ac. Sci. cxxxi, pp. 1068, 1069.

Giard, congratulatory address to on his election to the Academy of Sciences, MAINDRON (847).

Eleanor Ormerod, degree of LL.D., Ent. Rec. xii, p. 139.

Baron C. R. von Osten Sacken, elected honorary member, Bull. Soc. ent. France 1900, p. 375.

J. H. Fabre, account of, LEFEBVRE (808).

Brunner v. Wattenwyl, with portrait, BURR (203).

Ernest Candèze, biography of, portrait and bibliography, FRAIPONT (443).

C. G. Thomson with portrait and list of his writings, BENGTSOON (95).

George D. Hulst, Rev. Dr, WEEKS (1393).

Fritz Müller, biography of, with portrait, IHERING (633).

Ferdinando Piccioli, biography of, BARGAGLI, pp. 217-228, Bull. Soc. ent. Ital. xxxii.

E. G. Balbiani, biography of, HENNEGUY, pp. i-xxxvi, Arch. Anat. micr. iii.

Dr Otto Staudinger, by Ed. HERING, Ent. Zeit. Stettin lxi, pp. 382-395.

Henry Herbert Lyman, note and portrait, Canad. Ent. xxxii, pp. 1, 2.

George Norman 1823-1882 with portrait, Tr. Hull Club i, pp. 105-114, portrait.

### Obituary Notices (arranged alphabetically). See also Biographical.

Dr T. Adensamer, Verh. Ges. Wien I, p. 579.

Ernest Allard, Bull. Soc. ent. France 1900, p. 42.

Dr Henri Beauregard, Bull. Soc. ent. France 1900, p. 129.

Theodor Beinling, Zeitschr. Ent. Breslau xxv, p. 26.

Charles Émile Blanchard, Bull. Mus. Paris 1900, pp. 53-59 and Bull. Soc. ent. France 1900, p. 41.

William Gabriel Blatch, by W. W. F., Ent. Mag. xxxvi, p. 89; Entomologist xxxiii, p. 136 and P. ent. Soc. London 1900, p. xliii.

Andrew Bolter, Ent. News Philad. xi, p. 451.

John Brooks Bridgman, by CLAUD MORLEY, Ent. Mag. xxxvi, p. 15 and with list of papers, Tr. Norfolk Soc. vii, pp. 101-104.

- J. A. Dakin, *Ent. News Philad.* xi, p. 451.  
 Armand David, p. 325, *Bull. Soc. ent. France* 1900.  
 Lord Dormer, *P. ent. Soc. London* 1900, p. xlv.  
 Dr Walter Battershell Gill, *Ent. Mag.* xxxvi, p. 66 and *P. ent. Soc. London* 1900, p. xliii.  
 Prof. Francis Leroy Harvey, CALVERT, *Ent. News Philad.* xi, pp. 451, 452.  
 Ottmar Hofmann, with portrait, *Illustr. Zeitschr. Ent.* v, pp. 140-142, with list of writings, pp. 142, 143, by ESCHERICH; by LORD WALSLINGHAM, *Ent. Mag.* xxxvi, p. 212.  
 The Rev. George Duryea Hulst, Ph.D., SMITH, pp. 613-615, portrait, *Ent. News Philad.* xi; see also Biography.  
 Heinrich Kuntze, *Zeitschr. Ent. Breslau* xxv, p. 27.  
 William Lennon, SERVICE, pp. 134-136, *Ann. Scott. Nat. Hist.* 1900.  
 H.-J. Lhotte, *Bull. Soc. ent. France* 1900, p. 293.  
 Dr W. H. Lowe, *P. ent. Soc. London* 1900, p. xliii.  
 H. Lucas, *Bull. Mus. Paris* 1899, p. 321.  
 Ch. Marquet, *Bull. Soc. ent. France* 1900, p. 201.  
 R. H. Meade, *Ent. Mag.* xxxvi, p. 46.  
 Prof. Jos. Mik, by G. H. VERRALL, *P. ent. Soc. London* 1900, p. xlv.  
 A. Milne-Edwards, *Bull. Soc. ent. France* 1900, pp. 177, 178.  
 H. Nicolas, with list of writings, *Miscell. ent.* viii, pp. 86-88.  
 Sir James Paget, BLOOMFIELD, p. 89, *Ent. Mag.* xxxvi.  
 Emanuel Pokorný, *Wien. ent. Zeit.* xix, p. 136.  
 George Ruscheweyh, *Ent. News Philad.* xi, p. 580.  
 Baron de Selys Longchamps, LAMEERE, pp. 467-472, *Ann. Soc. ent. Belgique* xlv.  
 Victor Lopez Sevone, *Bull. Soc. ent. France* 1900, p. 273.  
 Hugo Soltau, *Ent. News Philad.* xi, p. 450.  
 C. Sommer, *Zeitschr. Ent. Breslau* xxv, p. 25.  
 William Blundell Spence, *P. ent. Soc. London* 1900, pp. i and xlii; *Ent. Mag.* xxxvi, p. 68.  
 Dr Otto Staudinger, by Prof. O. THIEME, *Berlin. ent. Zeitschr.* xlv, pp. 309-311; by H. J. ELWES, *P. ent. Soc. London* 1900, pp. xxvi-xxxii; *Ent. Nachr.* xxvi, pp. 361-363; by W. F. K., *Entomologist* xxxiii, pp. 323, 324.  
 Albert Titze, p. 24, *Zeitschr. Ent. Breslau* xxv.  
 Christopher Ward, *Ent. Mag.* xxxvi, p. 213.  
 William Watkins, *Entomologist* xxxiii, p. 208.  
 F. M. Van der Wulp, *Ent. Mag.* xxxvi, p. 16 and Notice of, SNELLEN (1251).

### ECONOMIC ENTOMOLOGY.

The value of injections for the protection of plants against Insects, BERLESE (106).

Importance of Insects in Forests, SMITH (1241).

Proceedings of the twelfth annual meeting of the Association of economic entomologists. *Bull. U. S. Dep. Agric. Ent.* xxvi, 102 pp.

Rapport sur le fonctionnement du laboratoire de Zoologie agricole de la Faculté des sciences de Marseille; VAYSSIÈRE, *Ann. Fac. Marseille* x, pp. 79-83.

Reports; Britain, OMEROD (964).—England, Warburton (1373), corn-crop pests.—Kent, THEOBALD (1315).—Dublin, CARPENTER (228).—Sweden, SVEN, *Ent. Tidskr.* xxi, p. 49.—Norway, 1899, SCHOYEN (1159).—Roumania; injurious Insects, MONTANDON (919).—Injurious insects in India, BARLOW, Locusts etc. (69); ANON., pests of sugar-cane etc. (34).—



Some Australian injurious Insects, FROGGATT (467).—Economic entomology in Australia, FROGGATT (469).—Victoria, Australia, FRENCH (445).—Ontario, 1900, FLETCHER, pp. 62-72, Rep. ent. Soc. Ontario 1900: LOCHHEAD, t. c. pp. 72-75.—N. American miscellaneous, for contents see HOWARD (616).—N. America, FELT (407, 409).—New Jersey, SMITH (1235, 1242).—New Mexico, COCKERELL (265).—Administrative and bibliographic, COCKERELL (267).

List of New Mexico exp. Stat. Bulletins, COCKERELL (266).

The Insects and Acari causing white-ear in Corn, REUTER, E. (1103).

Insects and birds, FROGGATT (465).

The natural protection of plants against caterpillars, LAGERHEIM (791).

Locust plagues, MUNRO (930, 931).—Locusts in Australia, FROGGATT (463).

Insects injurious to forest trees in N. America, FELT (410).—Insects injurious to Forests in New York (410).

Canada, injurious Insects, FLETCHER (428).

Injurious to plants, German Insects, coloured plates, KIRCHNER & BOLTSHAUSER (726).

Some remarks on injurious Insects and on Krüger's [Zool. Rec. 1899, Ins. Titles (728)] work, DOHRN (342).

Injuries to Vine in Germany in 1898, MORITZ (927).

New sugar-beet pest, DOANE (334).—Beet, *Aphis* injurious to, DOERSTLING (339).

Report of the malaria expedition to Sierra Leone, Nature lxi, p. 614.

Mosquitoes, GILES (508).—Malaria and mosquitoes, CHRISTOPHERS & STEPHENS (257), STEPHENS & CHRISTOPHERS (1281), DANIELS, STEPHENS, CHRISTOPHERS (310), BASILI (75), GRASSI (516 to 519).

Elementary account of the malaria parasite, SCHULTHESS RECHBERG (1164).

Lecture on mosquitoes and malaria, ROSS (1129).

Malaria not exclusively due to *Anopheles*, ROGERS (1127).—Mosquitoes and malaria, views of an African Naturalist, MARSHALL (858).—Relation between *Anopheles* and malarial fever in France and Corsica, LAVERAN (801).

Destruction of mosquitoes, CELLI & CASAGRANDE, Atti Soc. Studi Malaria i, 1899, pp. 1 etc.; Summary in Illustr. Zeitschr. Ent. v, p. 171.—Remedies against mosquitoes, HOWARD (612).—Killing mosquitoes by oil and petroleum, LAVERAN (799).—Protection against mosquitoes, FERMI & LUMBAU (414, 415).

Malaria in birds, and mosquitoes, DANIELS (309).

Mosquitoes and filaria, GRASSI & NOÉ (518), NOÉ (946).

Insects attacking man, SCHÖYEN (1159).—Diptera attacking man, PEPPER (984).—Larvæ of *Sarcophila* in human intestine, PERRONCITO (992).—Dipterous larvæ a cause of epilepsy, FRENCH (447).

Flies and typhoid fever, HOWARD (611).

Diptera injurious to stock in Britain, ORMEROD (965).

"Doog" and "Balaad" flies in Somaliland, PEEL (983, p. 9).

Corpses, fauna of, NIEZABITOWSKI (944).

*Forficula auricularia* beneficial, KIRKALDY, p. 87, Entomologist xxxiii.—*Forficula* and bees, BUYSSON, p. 183, Bull. Soc. ent. France 1900.

Silkworm manual, BOLLE (136); silk-industry in Austria, diseases of silkworm, BOLLE (137).—Elementary paper on silkworm and silk industry, GILLBARD (510).—Grasserie disease of the silkworm, MÉNÉGAUX (894).

Insects injurious to cotton in Egypt, Bull. U. S. Dep. Agric. Ent. xxii, p. 99.

Insects injurious to Sugar-cane in Java, ZEHNTNER (1423-1430).

Injurious *Lepidoptera* in Japan, MATSUMURA (869).

- Insects injurious to tobacco in N. America, HOWARD (617).  
 Trypetid flies destroyers of fruit in S. Africa, VERRALL, p. ix, P. ent. Soc. London 1900.—Moths feeding on fruit in Natal, BARRETT, p. 142, Ent. Mag. xxxvi, and MARSHALL, t. c. p. 207.  
 Forests in India, Insects injurious to, STEBBING (1272).  
 Tea: *Coccidæ* on, GREEN (524).  
 Insects injurious to sunflowers, KRULIKOWSKY (786), SCHREINER (1160).  
 Conifers, Insects affecting, at Reims, BELLEVOYE & LAURENT (92).—Pines destroyed by *Coleoptera* in Gard, MINGAUD (912).—Enemies of the White Pine, *Pinus strobi*, CHITTENDEN (243).—Injuries to conifers by *Tomicus*, BARGMANN (68).—*Diplosis* destroying Monterey pine, SNOW & MILLS (1252).  
 Strawberry pests, *Phoxopterus comptana* and *Aphis forbesi*, SMITH (1246).—*Harpalus caliginosus*, destroying strawberries, WEBSTER (1389).  
 Insects attacking oaks in Tunis, SEURAT (1202).  
 Injuries to *Abies pectinata*, *Mindarus abietinus* (*Aphidæ*), NÜSSLIN (948): *Pemphigus poschingeri*, id. (949).  
 Grape pest, *Fidia viticida*, in New York, SLINGERLAND (1231).  
 Cabbage, insects injurious to, SCHREINER (1161).—*Ceuthorrhynchus ruebsaameni* injurious to *Brassica* in Germany, KOLBE (752).  
 Insect pests of sugar-cane in W. Indies, W. Ind. Bull. ii, pp. 41–45.  
*Morinus asper* and *Lamia textor* injurious in Italy, CECCONI (232).—Ravages of *Hylastes trifolii*, CECCONI (231).  
*Saperda vestita, candida*, and *oberea*, injurious in N. America, WEBSTER, pp. 81–84, Rep. ent. Soc. Ontario 1900.—*Lethrus apterus*, ravages etc., TARNANI (1305).—*Lyctus canaliculatus*, ravages in furniture etc., BUREAU (195).  
 Diptera in wheat-fields in N. America, WEBSTER (1388).  
*Mayetiola destructor*, *Platyparea poeciloptera*, injuries and remedies, BOLLE (135).—Hessian-fly, FROGGATT (464).—*Cecidomyia oenophila*, TRUCHOT (1329).  
 Prune in N. America, Insects injurious to the, CORDLEY (295).  
 Ravages of *Brachytripes achatinus* in coffee plantations, BORDAS (150).  
 "The nun," *Ocneria dispar*, LAMPA (796).—Ravages of *Ocneria dispar* in Sweden, WERMELIN, AURIVILLIUS & RAMSTEDT (1405).  
 Ravages of *Cliniocampa distria*, the forest tent-caterpillar, LOWE (827).  
 Vanilla, *Lepidopteron* injurious to, JOANNIS (661).  
 Corn in N. Jersey and Angoumois grain moth, SMITH (1245).  
*Neuronia popularis* injurious to maize in Roumania, SEEMAN, p. 122, Soc. ent. xv.  
*Acherontia*, ravages of, AIGNER-ABAFI, Illustr. Zeitschr. Ent. v, pp. 36, 37.  
 Ravages of the Fichtennestwickler (*Grapholitha tedella*), JENTSCH, Münd. forstliche Heft. 1899, pp. 156–158.  
*Psilura monacha* in Silesia, WÖHL, p. 364, Illustr. Zeitschr. Ent. v.  
 Sugar-cane borer, *Diatraea*, LEFROY (809).  
*Ephestia kuehniella* at Reims, TUNIOR, pp. 3–8, Bull. Soc. Reims ix.  
*Hyponomeuta* ravages, the small ermine moths, J. Board Agric. vii, pp. 167–169.—*Hyponomeuta malinella*, injuries to apples in Russia, SCHREINER (1162).  
*Pentatomid* Hemipteron injurious to coffee, KIRKALDY (732).  
*Peylla* injurious to trees in India, BUCKTON (192).  
*Phylloxera vastatrix*, RITTER & RUBSAAMEN (1120).—Ravages and expense of *Phylloxera* in Italy, OTTAVI (973).  
*Aphid* destroying green-pea in N. America, JOHNSON (667).  
 Apple louse, *Phorodon mali*, SMITH (1243).  
 Violets, *Aphid* injurious to, PERGANDE (986).  
*Aleurodes* injurious to betel in India, BUCKTON (193).

Resistance of *Coccidæ* to external influences and agents, REH (1082).

Effects of *Coccidæ* on vegetation, KOCHS (740).

*Aspidiotus perniciosus*, SJÖSTEDT (1224).—San José scale in Japan, KELLOGG, p. 144, *Psyche* ix.—Control of San José scale, MARLATT, Circular 42, U. S. Dep. Agric. Ent. 1900, 6 pp.

Coccids on fruit trees, LOCHHEAD (824).

Injurious *Coccidæ* in Britain, NEWSTAAD (939).—*Coccidæ* injurious to fruits and vines in Germany, FRANK & KRÜGER (444).—*Coccidæ* injurious to fruit in Germany, KRÜGER & KRÜGER (785).—Coccid injurious to vines, S. Africa, COCKERELL (283).—*Coccidæ* on American fruit at Hamburg, BRICK (184).—Coccids injurious to vine and *Eugenia* in Brazil, HEMPEL (578).

*Rhiperia* injurious to sugar-cane in India, GREEN (525).

*Ceroplastes* injurious to *Citrus*, remedies, GUERCIO (543).

*Aspidiotus diffinis* in N. America, MARLATT (856).

*Nabis lativentris* destroys eggs of *Pieris*, MARCHAL (855).

Injury to corn by *Thrips cerealium*, PUPPEL, Schr. Ges. Danzig. x, pp. 46-48.

*Thrips* injurious to strawberry, QUAINANCE (1065A).

Fig-insects, Australian, FROGGATT (466).

Lac insect destroyed by *Eublemma*, DUDGEON, p. 379, J. Bombay Soc. xiii, GREEN, t. c. p. 538.

Parasites of Hessian fly in Russia, POSPJELOW (1050).

Crude petroleum and San José scale, SMITH (1244).

Paris green against locusts, POGIBKO (1045), ROSSIKOW (1131).

Mode of destroying *Tabanidæ*, PORTSCHINSKY (1049).

*Aspongopus nepalensis* used as food, WATERHOUSE, p. ix, P. ent. Soc. London 1900.

Australian manna or lerp, FROGGATT (461).

Titles of papers that have appeared in Russian in "Selskoe Khozyaistvo i Lyesovodstvo," WILCOX, pp. 404-406, Ent. News. Philad. xi.—List of recent papers on economic entomology, Riv. Patol. Veg. viii, pp. 190 etc.—For bibliographic list, including many recent Italian works on economic entomology, see Monit. Zool. ital. xi, pp. 359-365.

## FAUNISTIC: GEOGRAPHICAL DISTRIBUTION.

N.B.—The numbers in brackets refer to "Titles"; by their means it is intended to give a reference to every memoir containing a notice affecting the entomological fauna of each of the twelve regions here adopted. But synonymical notes and changes of systematic position are not included in these references. In addition to giving references to titles of works that actually add to the faunistic record of a region, there are also comprised references to a large number of works on local fauna, or "stations." The locality in such cases is usually added, and the reference is, as a rule, made direct to the original work, not to our title-numbers, many of these local faunistic notes not being included at all in our list of titles. Besides this a geographical name is frequently added to the literary reference, but this has no value beyond indicating that the paper refers to that locality; a collection of these references with a locality appended would not be complete as regards that locality, for any other references in the same division that have not any particular locality attached may refer also in part to this special locality.

## GENERAL.

Insects at sea, FOULTON, p. 80, Ent. Rec. 80.—*Hypolimnas misippus* at sea, FOULTON, p. 315, Ent. Rec. xii.

"Precinctive" proposed as the equivalent of endemic or peculiar, SHARP, Fauna Hawaiensis ii, p. 91.

On the value of "Local fauna," HANDLIRSCH (560).

*Chlorida festiva* in Africa and America, VETH, p. 311, Tijdschr. Ent. xliii.

Imported ants, FOREL, pp. 284-286, Mt. Schweiz. ent. Ges. x.

Cosmopolitan *Coleoptera* in Holland, EVERTS, Tijdschr. Ent. xliii, Versl. pp. 3-7.

N. sp. without locality. *Lep. Canerkes albivitta*, ROTHSCHILD, Nov. Zool. vii, p. 275.

### 1. ARCTIC AND ANTARCTIC.

*Coleoptera* and *Lepidoptera*, Beeren Eiland, AURIVILLIUS (46).

*Coleoptera*. FALL (397).—Iceland, see Insular.

*Lepidoptera*. STRAND (1287).

*Diptera*. LUNDBECK, Greenland (838).

*Collembola*. CARPENTER (227), SKORIKOW (1228), WAHLGREN (1361).

### 2. INSULAR (including NEW ZEALAND).

Iceland: *Coleoptera*, SHARP (1211).

Loochoo Ids.: *Lepidoptera*, LEECH (807).

Azores: *Coleoptera*, FAUVEL (404).

Canaries: *Coleoptera*, REITTER (1097); *Odonata*, MARTIN (865).

Hawaiian Ids.: *Coleoptera*, SHARP (1209); *Lepidoptera*, Hawaii and Laysan Ids., MEYRICK (906).

Galapagos: *Hemiptera*, DISTANT (327).

King Is.: *Hemiptera-Heteropt.*, DISTANT (324), BREDDIN (176).

Thursday Is.: *Coleoptera*, HELLER (574).

Fiji Ids., S. East Ids., New Hanover, Woodlark, Tugela, Tulaga: *Coleoptera*, KERREMANS (693).

New Pomerania: STEIN (1276), SPEISER (1262, 1264).

Bismarck Arch.: *Diptera*, SPEISER (1261); *Lepidoptera*, SNELLEN (1248); *Rhopalocera*, PAGENSTECHER (975); *Heterocera*, id. (976); *Odonata*, RIS (1119).

New Hebrides: *Hemiptera-Heteropt.*, DISTANT (325).

Solomon Ids., New Ireland: *Lep.*, GROSE-SMITH (527).

New Britain: *Insecta*, SHARP (1208); *Hem.-Heter.*, BREDDIN (175), HORVATH (606).

Loyalty Ids.: WARREN (1375).

New Zealand: the New Zealand Zoological region, FARQUHAR, Nature lxi, pp. 246-248, COCKERELL, t. c. p. 367; *Coleoptera*, SHARP (1210), MATTHEWS (870), HORN (600), FAUVEL (401, 403); *Hymenoptera*, ASHMEAD (39), CAMERON (223); *Lepidoptera*, HUDSON (621), QUAIL (1062); *Diptera*, HUTTON (631); *Orthoptera*, HUTTON (632).

Chatham Ids.: *Hymenoptera*, ASHMEAD (43).

### 3. PALÆARCTIC REGION.

(a.) Collective Papers referring to the *whole region* or *several* parts thereof.

*Coleoptera*. BERNHAUER (110, 111), DESBROCHERS (314, 315), FAUVEL (404), FLEISCHER, Turkestan and Mongolia (423), FLEISCHER, Transcaucasus and Algeria (427), GANGLBAUER (486), JAKOWLEFF (654), JAKOWLEFF, incl. Persia (651), JAKOWLEFF LUZE (840), ORBIGNY (963), PIO (990, 10



casus, Anatolia, Syria (1007), REITTER (1091, 1094, 1095, 1098, 1099, 1101, 1102), REITTER, incl. Tibet and Mongolia (1090), SAHLBERG (1143), SCHILSKY (1154), SCHULTZE, A. (1167), SCHWARZ, O. (1171), SEMENOW (1191, 1193, 1194, 1195, 1199), WEISE (1394).

*Hymenoptera*. ANDRÉ (27), BERTHOUMIEU (112), BUYSSON (217), DUCKE (351), EMERY, incl. Bukhara (374), FRIESE (457), KOHL, incl. Mongolia (741), KIEFFER (700), KOKUJEW (744, 745, 746), MARSHALL (861), SCHMIEDEKNECHT (1155).

*Lepidoptera*. FUCHS (473), HAMPSON (546), GRUM-GRSHIMAILO (541), KENNEL (690), LANG, *Rhopalocera* continued in Sci. Gossip 1900, STAUDINGER (1270), TUTT, List of *Psychides* (1340, pp. 431-434), WALSINGHAM (1365).

*Diptera*. BECKER (82, 83), KIEFFER (705), STEIN (1278).

*Hemiptera*. JAKOWLEFF, Astrakhan and Transcaspian (656), REUTER, O. M. (1106).

*Thysanura*. SKORIKOW, Buchara (1227).

### (b.) *Collective Europe.*

*Coleoptera*. BERNHAUER (107, 108, 109), DU BUYSSON (215), CASEY (229, p. 67 etc.), KRAUSS (781).

*Hymenoptera*. ASHMEAD (43).

*Lepidoptera*. ANDRÉ continues the illustrated analytical tables, Miscell. ent. viii, pp. 9 etc.—WALSINGHAM (1371), Ent. Mag. xxxvi, p. 179.—*Opogona dimidiatella* is not European, WALSINGHAM, p. 180, Ent. Mag. xxxvi.

*Diptera*. HENDEL (580), PANDELLÉ (977).

*Hemiptera*. STROBL (1290), NEWSTEAD, *Coccidae* (940).

*Odonata*. McLACHLAN, p. 114, Ent. Mag. xxxvi.

*Orthoptera*. The natural divisions of Europe according to *Orthoptera*, BURR (202).—Britain and Belgium compared, LUCAS (835).

*Collembola*. Geographical distribution, SKORIKOW (1229).

### (c.) *British Islands.*

#### THE FAUNA AS A WHOLE.

*Coleoptera*. *Trogophloeus anglicanus*, n. sp., SHARP (1210).—*Orochares angustatus*, novelty, FOWLER, p. 286, Ent. Mag. xxxvi.—*Anthonomus rufus*, novelty, DONISTHORPE & BENNETT, p. 159, Ent. Rec. xii.—*Trigonogenius globulum* in corn mills in Lancashire, TOMLIN, p. 64, Ent. Mag. xxxvi.—*Chilomenes lunata* in England, WOOD, p. 115, Ent. Mag. xxxvi.—*Anchomenus quadripunctatus*, confirmed, CHAMPION, pp. 202 and 236, Ent. Mag. xxxvi.

British dumble-dors, BURGESS SOPP, pp. 225 etc., Sci. Gossip vi. British cockchafers, id. t. c. pp. 353 etc.—British myrmecophilous *Col.*, DONISTHORPE (346).—*Melos* localities, WOOD, pp. 46, 47, Ent. Rec. xii.

*Hymenoptera*. CAMERON, *Harkeria*, *Lamadatha*, 2 genn. and spp. n. (221).—*Prosopis palustris*, sp. n., PERKINS (991).—*Pompilus* (*Wesmaelinus*) *sanguinolentus*, novelty, SAUNDERS, p. 206, Ent. Mag. xxxvi.—*Crabro carbonarius*, novelty, SAUNDERS, t. c. p. 227.—*Odynerus tomentosus*, novelty, PERKINS, p. 172, Ent. Mag. xxxvi.—*Ellampus truncatus*, novelty, MORICE, p. 107, Ent. Mag. xxxvi.—*Blacus armatulus*, novelty, BEAUMONT, p. 288, Ent. Mag. xxxvi.—*Tenthredopsis thornleyi*, n. sp., MORICE, p. 40, Ent. Mag. xxxvi.—*Helcon annulicornis*, as British, MORLEY, p. 174, Ent. Mag. xxxvi.—*Heriades truncorum*, confirmed, MORICE, p. 203, Ent. Mag. xxxvi.—

*Nomada atrata*, readmitted, SAUNDERS, p. 204, Ent. Mag. xxxvi.—*Pompilus approximatus*, *Osmia parietina* revived, SAUNDERS, p. 51, Ent. Mag. xxxvi.—The British *Chrysididae*, MORICE (925).

*Lepidoptera*. *Tinea richardsoni*, n. sp., WALSHINGHAM (1371).—*Eriocrania fimbrata*, n. sp., WALSHINGHAM (1369).—*Phibalapteryx aquata*, novelty, TUTT, p. 35, Ent. Rec. xii: PROUT, t. c. p. 85.—*Zelleria phillyrella*, novelty, in Ireland, BARRETT, p. 4, Ent. Mag. xxxvi.—*Argynnis niobe*, COTTAM, pp. 41 and 89, Ent. Mag. xxxvi.—*Cethosia cyanea* at Norwich, SCOLLIICK, p. xvi, P. ent. Soc. London 1900.—*Cossus orc* at Tilbury dock, TUTT, p. 293, Ent. Rec. xii.—General work (commencing *Geometridae*), BARRETT (72).—Conclusion of work on larvæ, BUCKLER (191).—*Vanessa antiopa*, numerous records for 1900, for which see Entomologist, Ent. Mag., Ent. Rec.—Numerous records of *Colias edusa* and *hyale* in the various magazines are not here dealt with.—*Acherontia atropos*, numerous records for the autumn of 1900: cf. the journals noticed above, especially Entomologist xxxiii, pp. 269, 270.—Distribution of *Nonagria brevilinea*, WHEELER, pp. 278, 279, Ent. Mag. xxxvi.—Varieties of British *Lep.*, OBERTHÜR (950).—TUTT (1340) deals with *Psychids* and *Lachneids* and has some n. spp.

*Diptera*. *Atherix crassipes*, novelty, ANDREWS, p. xxii, P. ent. Soc. London 1900.—*Hyetodenia aculeipes*, novelty, GRIMSHAW, p. 253, Ent. Mag. xxxvi.—*Leucophenga* (as *Drosophila*) *maculata*, novelty, SHARP, pp. 251 and 289, Ent. Mag. xxxvi.—*Hypoderma silenus*? THEOBALD, Zoologist 1900, p. 340, MOFFAT, Irish Natural. ix, p. 247.—Localities for *Psychodidae*, KING, pp. 135, 136, Ent. Mag. xxxvi.—*Loxocera*, localities, VICE, p. 115, Ent. Mag. xxxvi.

*Aphaniptera*. *Ceratophyllus styx*, n. sp., on Sand-Martin, N. C. ROTHSCHILD (1134).—*Typhlopsylla orientalis*, novelty, N. C. ROTHSCHILD, Ent. Rec. xii, p. 19.

*Hemiptera*. *Nabis brevis*, novelty, SAUNDERS, p. 227, Ent. Mag. xxxvi.—*Elasmostethus ferrugatus*, novelty, W. E. SHARP, Ent. Mag. xxxvi, p. 131.—*Typhlocyba cruenta*, *candidula*, novelties, EDWARDS, p. 279, Ent. Mag. xxxvi.—British water-bugs, continued, KIRKALDY, pp. 148–152, Entomologist xxxiii.

*Neuroptera*. *Plectrocnemia brevis*, novelty, McLACHLAN, p. 149, Ent. Mag. xxxvi.—*Beræa articularis*, novelty, EATON, p. 180, Ent. Mag. xxxvi.—*Bertkauia prisca*, novelty, McLACHLAN, p. 220, Ent. Mag. xxxvi.—*Agrion hastulatum*, novelty, McLACHLAN, p. 226 and p. 263, Ent. Mag. xxxvi.—Localities for *Libellula fulva*, McLACHLAN, p. 65, Ent. Mag. xxxvi.—A migrating swarm, *Odonata*, LUCAS (833), PORRIT, t. eod. p. 247.—*Odonata* of old English authors, LUCAS (834).—Dragon-flies in 1899 with numerous localities, LUCAS, pp. 137–143, pl. iv.

*Orthoptera*. General notes, BURR (200).—Localities, LUCAS, p. 11, Entomologist xxxiii.—Old localities, BURR, pp. 97–99, Ent. Rec. xii.—*Labidura riparia* and other *Forficulidae*, DALE, pp. 75–77, Entomologist xxxiii.—The Orthoptera of Britain and Belgium; *Nyctibora holosericea* in Britain, LUCAS (835).—The geographical distribution of British *Orthoptera*, BURR (201).

#### LOCAL LISTS.

The arrangement adopted in each Order is roughly, Channel islands, England from South to North and from West to East, Wales, Scotland, Ireland.

*Insecta*. The *Coleoptera* and *Hemiptera* of the Deal Sandhills, Ent. Mag. xxxvi, pp. 94–101.—Harting Sussex, *Hym.* and *Hem.*, SAUNDERS, p. 14, Ent. Mag. xxxvi.—Ipswich, MORLEY, p. 42, Ent. Mag. xxxvi.—Lakenheath, MORLEY, p. 288, Ent. Mag. xxxvi.—Norfolk galls, BLOOMFIELD, pp. 110–112, Tr. Norfolk Soc. vii.—Yorkshire and North records in Naturalist 1900.—*Iale*

pp. 492-496, and ii, pp. 206-209.—Scotland: some records of Scottish *Coleoptera* and *Hemiptera* [an important list], EVANS, pp. 91-103, Ann. Scott. Nat. Hist. 1900.—Scotland, YERBURY, p. xiv, P. ent. Soc. London 1900.—Solway, SERVICE, p. 249, Ann. Scott. Nat. Hist. 1900.—Peebles, THORNLEY, p. 251, Ann. Scott. Nat. Hist. 1900.—*Coleoptera* and *Lepidoptera* at Rannoch, WALKER, pp. 21-28, Ent. Mag. xxxvi. Ulster, JOHNSON, pp. 183, 184, & 290-292, Irish Natural. ix.

*Coleoptera.* List of the *Coleoptera* of Alderney, LUFF, pp. 57, 58, Ent. Mag. xxxvi.—Alderney, LUFF, p. 237, Ent. Mag. xxxvi.—Plymouth, CAMERON, p. 261, Ent. Mag. xxxvi; Plymouth, KEYS, p. 134, Ent. Mag. xxxvi.—Exmouth, WOOD, p. 133, Ent. Mag. xxxvi.—Exmouth, *Carabus auratus*, WOOD, p. vii, P. ent. Soc. London 1900.—New Forest, RYLES, p. 262, Ent. Mag. xxxvi.—Hastings, BEARE, pp. 239, 240, Ent. Rec. xii.—Deal, pp. 161, 162, Ent. Mag. xxxvi.—Gravesend, BEARE, p. 262, Ent. Mag. xxxvi.—Woking, CHAMPION, p. 162, Ent. Mag. xxxvi and *Stylops*, CHAMPION, p. 134, Ent. Mag. xxxvi.—Dartford, CHAMPION, p. 133, Ent. Mag. xxxvi.—London, JENNINGS, p. 43, Ent. Mag. xxxvi.—Round London, BEARE, pp. 190, 191, Ent. Mag. xxxvi.—Richmond, BEARE, p. 12, Ent. Mag. xxxvi.—Richmond, BENNETT, p. 19, Ent. Rec. xii.—Lea Valley, JENNINGS, p. 261, Ent. Mag. xxxvi.—Chesham, ELLIMAN, p. 11 & p. 236, Ent. Mag. xxxvi.—Colchester, HARWOOD, p. 19 & p. 239, Ent. Rec. xii.—Suffolk, TOMLIN, p. 77, Ent. Rec. xii.—Wherstead Suffolk, MORLEY, p. 288, Ent. Mag. xxxvi.—Norfolk, BEARE, p. 334, Ent. Rec. xii.—*Cyllene crinicornis* at Retford, THORNLEY, p. 12, Naturalist 1900.—List of the *Coleoptera* occurring around Hull, RUSSELL, Tr. Hull Club i, pp. 129-134.—Scarborough, BAILEY, p. 11, Ent. Mag. xxxvi.—Liverpool and Denbighshire, W. E. SHARP, p. 64, Ent. Mag. xxxvi.—Southport, CHASTER, p. 287, Ent. Mag. xxxvi.—Cumberland, DAY, p. 262, Ent. Mag. xxxvi.—Cumberland, DAY, p. 330, Ent. Rec. xii. Cumberland, *Pyrochroa serraticornis*, MURRAY, p. 2, Naturalist 1900.—Cumberland, DAY & MURRAY, pp. 99-101, Ent. Rec. xii.—Glamorganshire, TOMLIN, p. 63, Ent. Mag. xxxvi.—S. Wales, WOOD, p. 237, Ent. Mag. xxxvi.—Pyle, S. Wales, *Anthicus bimaculatus*, TOMLIN, p. 78, Ent. Rec. xii.—Berwick, *Sphodrus leucophthalmus*, BOLAM, p. 128, Hist. Berwick Club xvii.—Scotland, *Carabus monilis*, *Xantholinus fulgidus*, FERGUSON, p. 53, Ann. Scott. Nat. Hist. 1900; *Carabus monilis*, FERGUSON, t. c. p. 125.—Pennine Hills, DAY, p. 159, Ent. Rec. xii.—Rannoch, BEARE, pp. 288-290, Ent. Rec. xii.—Forres, CHITTY, p. 237, Ent. Mag. xxxvi.—Invernesshire and Sutherlandshire, CHAMPION, p. 235, Ent. Mag. xxxvi.—JOHNSON, pp. 70-73, 131, 182, Irish Natural. ix.—Wicklow, *Ot. auro-punctatus*, STARKEY, p. 108, Irish Natural. ix.—Additions to the beetles of the Dublin district, HALBERT, pp. 278-284, Irish Natural. ix.—Shannon, Irish Natural. ix, p. 19.—Lough Foyle, BUCKLE, Irish Natural. ix, pp. 2-11; JOHNSON, t. c. p. 70; BUCKLE, t. c. p. 130.

*Hymenoptera.* Wareham, ROTHNEY, p. 13, Ent. Mag. xxxvi.—New Forest, SHARP, p. 264, Ent. Mag. xxxvi.—Folkestone, FREKE, p. 63, Ent. Mag. xxxvi.—Kent, SLADEN, p. 265, Ent. Mag. xxxvi.—Cobham, Surrey, MORICE, p. 210, Ent. Mag. xxxvi.—Holloway, ENOCK, p. xv, P. ent. Soc. London 1900.—Foxton, MASON, p. 243, Ent. Mag. xxxvi.—Birmingham, BRADLEY, p. 13, Ent. Mag. xxxvi.—Bury St. Edmund's, TUCK, pp. 13, 14, Tr. Norfolk Soc. vii.—*Aculeata* and *Tubulifera* of Nottinghamshire, second list, THORNLEY & CARR, pp. 37-43, Naturalist 1900.—Cumberland, DAY, p. 88, Ent. Mag. xxxvi.—Northumberland *Vespa austriaca*, ROBSON, p. 227, Sci. Gossip vi.—N. Wales, GARDNER, p. 242, Ent. Mag. xxxvi.—N. Wales, NEVINSON, p. 62, Ent. Mag. xxxvi.—Scotland, MALLOCH, p. 264, EVANS, pp. 265, 266, SAUNDERS, p. 266, Ent. Mag. xxxvi.—Scotland, *Andrena fuscipes*, EVANS, p. 54, Ann. Scott. Nat. Hist. 1900.—Scotland, *Bombus soroensis*, EVANS, p. 252, Ann. Scott. Nat. Hist. 1900.—Lothians

and Balerno, EVANS, p. 243, Ent. Mag. xxxvi.—Dumbartonshire, MALLOCH, p. 242, Ent. Mag. xxxvi.—Moray and Dalmeny, *Sirex juvencus*; Forfarshire, *S. gigas*, BROWN, CAMPBELL, PHILIP, p. 55, Ann. Scott. Nat. Hist. 1900.

*Lepidoptera*. Guernsey, LUFF, p. 239, BAKER, p. 240, Ent. Mag. xxxvi.—St. Austell, NEWSTEAD, p. 160, Ent. Mag. xxxvi.—Stonehouse, Gloucester, NASH, p. 270, Entomologist, xxxiii.—S. Devonshire, JÄGER, pp. 326–328, Entomologist, xxxiii.—Dartmouth, HANBURY, p. 260, Ent. Mag. xxxvi.—North Devon, LONGSTAFF, p. 42, Ent. Mag. xxxvi.—Tavistock, SOUTHBY, p. 288, Ent. Mag. xxxvi.—Weymouth, RICHARDSON, p. 260, Ent. Mag. xxxvi.—Ringwood, *P. machaon*, FOWLER, p. 267, Entomologist xxxiii.—New Forest, CARR, pp. 226–228, Entomologist xxxiii; ALDERSON, t. c. pp. 233–236.—New Forest, *N. castanea*, CLAXTON, p. 270, COCKAYNE, p. 305, Entomologist xxxiii.—New Forest, *P. machaon*, CHAWNER, p. 248, Entomologist xxxiii.—Bognor, MELDOLA, p. 306, Entomologist xxxiii.—Winchester, F. & C. BELLAMY, pp. 15–17, Entomologist xxxiii.—Hastings, BLOOMFIELD, p. 261, Ent. Mag. xxxvi.—Hailsham and Abbott's Wood, CARR, pp. 244–246, Entomologist xii.—Kent, CARR, pp. 46–49, Entomologist xxxiii.—Hythe, MANDY, p. 160, Ent. Mag. xxxvi.—Haslemere, LUCAS, p. 272, Entomologist xxxiii.—Crawley Down, BROWN, p. 238, Ent. Mag. xxxvi.—East Grinstead, *P. machaon*, F. W. F., p. 303, Entomologist xxxiii.—Dormans Park, *Stauropus*, BURR, p. 219, Ent. Rec. xii.—Croydon, GOWER, p. 240, Ent. Mag. xxxvi.—Bexley, CARR, p. 130, Entomologist xxxiii.—Bromley, LAURANCE, Entomologist xxxiii, pp. 271 and 306.—Norwood, WELLS, p. 272, Entomologist xxxiii.—Hackney Marsh, IMAGE, p. 62, Ent. Mag. xxxvi.—Holborn, London, IMAGE, p. 62, Ent. Mag. xxxvi.—South London, BARRETT, p. 159, Ent. Mag. xxxvi.—Maldon, RAYNOR, p. 272, Entomologist xxxiii.—Ipswich, SPARKE, p. 272, Entomologist xxxiii.—Essex, CAUSDALE, p. 272, Entomologist xxxiii.—Essex, MELDOLA, p. 249, Entomologist xxxiii.—Essex, *V. antiopa*, MELDOLA, p. 354, Entomologist xxxiii.—Waltham Cross, BOYD, p. 187, Ent. Mag. xxxvi.—Hertfordshire, COTTAM, p. 240, Ent. Mag. xxxvi.—Notes on *Lepidoptera* observed in Western Hertfordshire in 1897, 1898 & 1899, COTTAM, pp. 185–190, Tr. Hertfordsh. Soc. x.—Hertfordshire, BARRARD, p. 92, Entomologist xxxiii.—Hertfordshire, COTTAM, p. 303, Entomologist xxxiii; N. C. ROTHSCHILD, t. c. p. 352.—Northampton, BOSTOCK, p. 303, Entomologist xxxiii.—Tuddenham, SPARKE, p. 39, Entomologist xxxiii.—Huntingdon, BEAUFORD, p. 238, Ent. Mag. xxxvi.—Oxfordshire, *P. moneta*, BELL, p. 249, Ent. xxxiii; *V. antiopa*, id. t. c. p. 250.—Rugby, E. P. POULTON, pp. 22–25, Rep. Rugby Soc. 1900.—Teme Valley, *P. machaon*, EDWARDS, p. 303, Entomologist xxxiii.—Marlborough, MEYRICK, Hand-list of *Lepidoptera* of the district, Rep. Marlbor. Soc. xlviii, pp. 70–101.—Church Stretton, NEWNHAM (937).—Staffordshire, DALTRY, pp. 66–70, Rep. N. Stafford. Club 1899–1900.—Malvern, W. EDWARDS & R. F. TOWNBROW, cited in Entomologist, xxxiii, p. 42.—Martley, FROHAWK, p. 303, Entomologist xxxiii.—Hereford, PILLEY, p. 271, Entomologist xxxiii.—Mundesley Norfolk, KEMP, p. 271, Entomologist xxxiii.—Thetford, DURRANT, p. 259, Ent. Mag. xxxvi.—Lowestoft, JENKINSON, p. 188, Ent. Mag. xxxvi.—Lowestoft, SMITH, p. 237, Ent. Mag. xxxvi.—Chester, electric lamps, DOBIE, p. 21, Rep. Chester Soc. xxix.—Hull, J. W. BOULT, cited in Entomologist xxx, 119, p. 43.—Hull, BOULT, pp. 115, 116, Tr. Hull Club i.—List of the *Macro-Lepidoptera* of the Kendal district, Moss, pp. 26–30, Rep. Kendal Ent. Soc. iii.—North Wales, ROLLASON, p. 14, Entomologist xxxiii.—Scotland, MORTON, p. 159, and EVANS, l. c., Ent. Mag. xxxvi.—Scotland, BANKS, p. 132, Ent. Mag. xxxvi.—Scotland, EVANS, p. 188, Ent. Mag. xxxvi.—Solway, *Acherontia*, SERVIGN, p. 54, Ann. Scott. Nat. Hist. 1900.—Notes on Wigtownshire *Lepidoptera*, MORRIS, Ann. Scott. Nat. Hist. 1900.—Roxburghshire.



p. 250, Ann. Scott. Nat. Hist. 1900.—Galashiels, SHAW, Hist. Berwick Club xvii, pp. 87, 88.—Galashiels, HAGGART, Entomologist xxxiii, pp. 44-46.—Edinburgh, *M. stellatarum*, EVANS, p. 54, Ann. Scott. Nat. Hist. 1900.—Glasgow and Kilmarnock, *Acherontia*, DALGLISH, p. 250, Ann. Scott. Nat. Hist. 1900.—Dumbarton, BANKES, p. 132, Ent. Mag. xxxvi.—Moray, BROWN, p. 14, Entomologist xxxiii.—Rossshire, *Acherontia*, ALICE FOWLER, p. 125, Ann. Scott. Nat. Hist. 1900.—Hebrides, BARRETT, p. 9, Ent. Mag. xxxvi; GRIFFITH, t. c. p. 41.—Hebrides, *Acherontia*, GILMOUR, Tr. Nat. hist. Soc. Glasgow vi, i, p. 169.—Isle of Lewis, FREMLIN, pp. 37, Entomologist 1900.—Ireland, Catalogue continued, KANE, Entomologist xxxiii, pp. 29 etc.—Ireland, supplement to Catalogue, KANE (670).—Ireland and Isle of Man, *Gnophria quadra*, MOFFAT, p. 292, Irish Natural. ix.—Londonderry, CAMPBELL, p. 246, Irish Natural. ix.—Cork, DONOVAN, pp. 143-148, Entomologist xxxiii; KANE, t. c. p. 197.

*Diptera*. New Forest, ADAMS, p. 14, Ent. Mag. xxxvi.—Worcestershire, BRADLEY, p. 87, Ent. Mag. xxxvi.—Bentley Woods, MORLEY, p. 244, Ent. Mag. xxxvi.—Lincolnshire, THORNLEY, p. 207, Ent. Mag. xxxvi.—Warrington, LOWE, pp. 149-155, Naturalist 1900.—Scotland, YERBURY, pp. 53-57, 84-87; EVANS, p. 87, t. c.; BLOOMFIELD, t. c. p. 87.—*Diptera scotica*: II, Invernessshire, GRIMSHAW, pp. 18-30, Ann. Scott. Nat. Hist. 1900.—Edinburgh, EVANS, p. 251, Ann. Scott. Nat. Hist. 1900.

*Hemiptera*. Slindon Woods, Sussex, SAUNDERS, p. 132, Ent. Mag. xxxvi.—Lincoln, FOWLER, Ent. Mag. xxxvi, p. 262.—Scotland, KIRKALDY, p. 10, Entomologist xxxiii.—Scotland, *Rhyparochromus dilatatus*, EVANS, p. 252, Ann. Scott. Nat. Hist. 1900.—Scotland, EVANS, p. 188, Ent. Mag. xxxvi.—Kinross and Argyll, *Salda muelleri*, EVANS, p. 251, Ann. Scott. Nat. Hist. 1900.—Ireland, *Acanthosoma hæmorrhoidale*, BRENNAN, p. 129, Irish Natural. ix; NEWSTEAD (939).

*Neuroptera*. Surrey, *Hemerobius*, BRIGGS, p. 14, Ent. Mag. xxxvi. Foxley Wood, Norfolk, McLACHLAN, p. 263, Ent. Mag. xxxvi.—Scotland, *Hemerobius*, MORTON, pp. 30-32, Ann. Scott. Nat. Hist. 1900.—Lanarkshire, *Boreus*, EVANS, p. 55, Ann. Scott. Nat. Hist. 1900.—Strathglass, KING, pp. 181-185.—Sutherlandshire, McLACHLAN, p. 263, Ent. Mag. xxxvi.—Ireland, KING, p. 288, Ent. Mag. xxxvi.

*Trichoptera*. South Devon, McLACHLAN, p. 264, Ent. Mag. xxxvi.—Colesborne, EDWARDS, p. 263, Ent. Mag. xxxvi.—Marlborough, MEYRICK, p. 288, Ent. Mag. xxxvi.—Huddersfield, PORRITT, p. 209, Ent. Mag. xxxvi.

*Psocida*. Dover, McLACHLAN, p. 88, Ent. Mag. xxxvi.

*Odonata*. Alderney, LUFF, p. 43, Ent. Mag. xxxvi.—Alderney, WALKER, p. 189, Ent. Mag. xxxvi.—Alderney, McLACHLAN, p. 209, Ent. Mag. xxxvi, —Poor Heath, Pokesdown, Goss, p. 241, Ent. Mag. xxxvi.—New Forest, *Ischnura pumilio*, LUCAS, p. 201, Entomologist xxxiii.—East Sussex, BLOOMFIELD, pp. 150, 151, 262, 288, Ent. Mag. xxxvi.—N.W. London, WILLIAMS, p. 241, Ent. Mag. xxxvi.—Scotland, EVANS, p. 88, Ent. Mag. xxxvi.—Scotland, *Agria puella*, EVANS, p. 125, Ann. Scott. Nat. Hist. 1900.—Scotland, old records, MORTON, pp. 108-110, Ent. Mag. xxxvi.—Invernessshire, Sutherlandshire, McLACHLAN, p. 241, Ent. Mag. xxxvi.—Ross, KING, p. 136, Ent. Mag. xxxvi.—Stornoway, LUCAS, p. 138, Entomologist xxxiii.—Aberdeenshire, BLOOMFIELD, p. 262, Ent. Mag. xxxvi.

*Orthoptera*. Hastings, LUCAS, p. 49, Entomologist xxxiii.—Suffolk, BURR, p. 212, Ent. Rec. xii.

(d.) *North Europe and Siberia* [see also (a.) and (b.).]

*Insecta*. Norway, Bidrag til Hallingdals og Lyngørs insektfauna, STRAND, pp. 46-72, Nyt. Mag. Naturv. xxxvii.

Norway, Om nogle *Staphylinider* og phytophage *Hymenoptera*, STRAND,

Arch. naturv. Christiania xxii, No. 3, 15 pp.—Norway, STRAND, Ent. Tidskr. xxi, pp. 30–32.

*Coleoptera.* Iceland, see Insular.—Faroë islands, SHARP (1211).—Finland, Geographical Catalogue, SAHLBERG (1145).—Sweden and Finland, LAMPA & HELENIUS, p. 152, Ent. Tidskr. xxi.—Bidrag til Kundskaben om Coleopterfaunaen i det Trondjemske, II, LYSHOLM, Norske Selsk. Skrift. 1899, pp. 1–26, *Carabidæ* to *Staphylinidæ*.—Bidrag til Kundskaben om Norges Coleopterfauna VII, HELLIESEN, pp. 32–35, Stavanger Mus. Aarsber. x.—Enumeratio *Coleopterorum* a N. Schirjajew circa urbem Petropawlowsk provinciae Akmolensis (Siberia occidentalis) a 1897 et 1898 collectorum, A. JAKOWLEW, pp. 689–711, Horæ Soc. ent. Ross. xxxiv.—GANGLBAUER, E. Siberia (485), WEISE, E. Siberia (1400, p. 441).

*Hymenoptera.* Några bidrag till kännedomen om Svenska Hymenopterers geografiska utbredning, NORDENSTRÖM, Ent. Tidskr. xxi, pp. 201–208.—LIE-PETTERSEN, Norway (823), KONOW, Siberia (757).

*Lepidoptera.* REUTER, Finland (1103), STRAND, Norway (1288).—Norway, Lepidopterologiske undersøgelser paa Jaederen 1899, LIE-PETTERSEN, Bergens Mus. Aarbog 1900, No. vii, 10 pp.

*Diptera.* AURIVILLIUS, Sweden, *Anthomyiida*, Ent. Tidskr. xxi, pp. 255, 256.

*Hemiptera.* MELICHAR, E. Siberia (891).

Folkestone, COLTHRUP, p. 50, Entomologist xxxiii.

*Neuroptera.* STRAND, Norway, *Pertida*, pp. 271, 272, Ent. Tidskr. xxi. Greenland, see Arctic, p. 99.

KEMPNY, Norway, *Pertida* (688).—AURIVILLIUS, Sweden, *Libellula caudalis*, Ent. Tidskr. xxi, p. 264.

*Orthoptera.* Sweden, AURIVILLIUS (47).—Siberia, ZUBOWSKY (1431).

(e.) *Central and Eastern Europe*, incl. *Denmark* [see also (a.) and (b.) and for *Caucasus* also (h.)].

*Insecta.* Belgium, LAMEERE (794) and pp. 259, 260, Ann. Soc. ent. Belgique xlv.

*Coleoptera.* Denmark, om Esbjergegnens Billefauna, JENSEN-HAARUP, pp. 98–103, Ent. Meddel. n.s. i.—BOVIE, Belgium, *Curculionides*, Ann. Soc. ent. Belgique xlv, pp. 379, 380.—Die Käfer von Nassau und Frankfurt. Achter Nachtrag. Zugleich ein Beitrag zur Käferfauna der unteren Lahn; BUDDEBERG, Jahrb. Nassau. Ver. liii, pp. 75–83.—Neuheiten der schlesischen Käferfauna aus dem Jahre 1899, GERHARDT, pp. 69–71, Deutsche ent. Zeitschr. 1900.—Zweiter Beitrag zur Käferfauna der Rheinprovinz, ROETTGEN, pp. 147–155, Verh. Ver. Rheinland lvi.—Silesia, GERHARDT, pp. 1–9, and 15–19, Zeitschr. Ent. Breslau xxv.—Beitrag zur *Coleopteren*-Fauna Unter-Frankens, MEIER, pp. 90–94, Ent. Nachr. xxvi.—KOLBE, Germany (752), MEUNIER, Lauenberg (901), STIERLIN, Switzerland (1283), LOKAY, Moravia (826), KRAUSS, Austria, pp. 239–241, Wien. ent. Zeit. xix, p. 239.—KNOTEK, Austria, *Scolytida* (737).—GANGLBAUER (487), GANGLBAUER, S. Tyrol (488).—CSIKI, Hungary (303).—Addit. ad faun. Col. Com. Trencsiniensis, BRANCSIK, pp. 39–42, Jahresh. Ver. Trencsin. 1898, 1899.—JACOBSON, Russia, pp. i–vi, Annuaire Mus. St. Petersb. v.

*Hymenoptera.* ALFKEN (16), NIELSEN, Denmark (943).—KIEFFER, Bitche (702).—ALFKEN, Germany (15).—KRIECHBAUMER, Germany (784).—FREY-GESSNER, Switzerland (448).—Nachtrag zur Bienenfauna Österreichisch-Schlesiens, DÜCKE, pp. 8–11, Ent. Nachr. xxvi.—SÄKFLIGET, Hungary (1301, 1303).—KIEFFER, Russia (701).

*Lepidoptera.* TEICH, Baltic provinces (1306).—SCHUTZ, Holland. *Hermannia festivella*, Tijdschr. Ent. xliii, Verh. p. 28.—Van p. 281, Ann. Soc. ent. Belgique xlv.—De OOMER

Belgium, p. 240, Ann. Soc. ent. Belgique xlv.—*Lépidoptères* capturés aux environs de Virton, BRAY, pp. 31–37, Ann. Soc. ent. Belgique xlv.—HIPPERT, Belgium, Ann. Soc. ent. Belgique xlv, pp. 454–456.—Germany, CHAPMAN (241).—SCHÜTZE, K. T. (1168), SORHAGEN (1255), FUCHS (473, 474).—Zweiter Nachtrag zum Verzeichniss der *Macrolepidopteren* der Dresdner Gegend, SCHOPFER, pp. 329, 330, Deutsche ent. Zeitschr. Lep. xii.—Die Gross-Schmetterlinge Erfurts. Zusammengestellt vom entomologischen Verein in Erfurt, Deutsche ent. Zeitschr. Lep. xiii, pp. 1–63.—Saxony, *Acentropus*, BRANDES, p. 223, Zeitschr. Naturw. lxxii, PETRY, t. c. p. 363.—HEYLAERTS, Switzerland (586).—Switzerland, Valais, FAVRE (405).—Switzerland, *Rhopalocera*, ROSA, pp. 33–37, Entomologist xxxiii.—Bericht über eine lepidopterologische Exkursion ins Kälfeuser Thal, 27 Juli bis 5 August 1899, MÜLLER-RUTZ, pp. 207–239, Ber. St. Gall. Ges. 1898, 1899.—Dritter Nachtrag zum Verzeichnis der Bündner *Lepidopteren*, Jahresber. Ges. Graubünden xliii, pp. 49–64.—JONES, *Rhopalocera*, Austrian Tyrol, pp. 271–275.—GALVAGNI, the Brenner-pass district, (484).—Beitrag zur *Macrolepidopteren*-Fauna der österreichischen Alpenländer, HORMUZAKI, pp. 24–33, Verh. Ges. Wien I.—Weiterer Beitrag zur *Lepidopteren*-Fauna von Pörschach in Kärnten, F. WAGNER, Verh. Ges. Wien I, pp. 526–532.—*Lepidoptera* in Hungary 50 years since, AIGNER-ABAFI, p. 193, Illustr. Zeitschr. Ent. v.—Kazan *Microlepidoptera*, KRULIKOVSKAGHO, Bull. Soc. Moscou xiv, 1899, pp. 157–188, and *Lepidoptera*, pp. 188–219.—Beitrag zur Kenntniss der Gross-schmetterlinge des Gouvernements Pleskau, KUSNEZOW, Horæ Soc. ent. Ross. xxxiii, pp. 85–131.

*Diptera*. Denmark, *Chionea arancoides*, KLÜCKER, p. 104, Ent. Meddel. n.s. i, p. 104.—MEUNIER, Baltic prov. (900).—JACOBS, Belgium (638).—DE MEYERE, Belgium (886).—KIEFFER, N. France and Bitche (706).—Ergänzungen zu Czwalina's Neuen Verzeichniss der Fliegen Ost- und Westpreussens, SPEISER, Illustr. Zeitschr. Ent. v, pp. 276–278.—LÜSTNER, Germany (839).—CZERNY, Austria (306, 307, 308).—MIK, Austria (911).—BEZZI, Hungary, *Empis* (119).—KERTÉSZ, Hungary (699).—PORTSCHINSKY, Russia (1049).

*Hemiptera*. MATSUMURA (866), MELICHAR (892), THEN (1313).—SCHOUTEDEN, Belgium, pp. 456–461, Ann. Soc. ent. Belgique xlv.—SCHOUTEDEN, Belgium, *Aphideæ* (1158).—HÜBER, Germany (622).—MELICHAR, Austria, p. 238, Wien. ent. Zeit. xix.

*Neuroptera*. TUMPEL (1337).—FOERSTER, Switzerland, *Odonata* (431, p. 261).—KEMPNY, Tyrol (689).

*Orthoptera*. LAMEERE, Belgium, Ann. Soc. ent. Belgique xlv, pp. 6, 7.—Germany and Austria-Hungary, REDTENBACHER (1077).—BURR, Innsbruck, p. 292, Ent. Rec. xii.

*Thysanura*. Moravia, cave, ABSOLON (5–10).

*Collembola*. WILLEM, Belgium (1415, 1416).—Beitrag zur Kenntniss der um Bilsch vorkommenden *Collembolen*, KIEFFER, pp. 113, 114, Berlin. ent. Zeitschr. xlv.—SCHÄFFER, Germany (1150).—ABSOLON, Moravia, cave *Collembola* (8, 9).—ABSOLON, Moravia, cave *Aphorurides* (9).—WAHLGREN, Volga (1363).—SKORIKOW, Orenburg (1226).

(f.) *France* [see also (a.), (b.) and (g.)].

*Insecta*. Bull. Soc. Reims ii–ix (now first seen) contains numerous notes on the local Insects; inter alia, les Zygènes, DEMAISON, v, pp. 71–73.—Contributions à la faune entomologique de la Somme, DUBOIS, pp. 55–57, Bull. Soc. Nord France xv.—Bordeaux, LAMBERTIE, pp. cxv–cxvii, Pr-Verb. Soc. Bordeaux iv.—Auvergne, with bibliographic list, BRUYAT & EUSÉBIO, pp. 397–400, Bull. Soc. ent. France 1900.

*Coleoptera*. ABEILLE & GROUVELLE (4), BEDEL (88), BELLEVOYE, Reims

(90).—BOURGEOIS (164), DESBROCHERS (816), LAJOYE, Reims (792).—PETERIMHOFF (995), ROGER (1126).—BEDEL, *Cassida ferruginea*, Bull. Soc. ent. France 1901, p. 117.—MAYET, *Aurigena unicolor*, Bull. Soc. ent. France 1900, p. 229.—Oise, BEDEL, p. 295, Bull. Soc. ent. France 1900.—Versailles, DUBOIS, pp. 41–45, 50–53, Echange xvi.—Somme, CARPENTIER, pp. 132–135, Bull. Soc. Nord. France xv.—Loire, PIC, p. 237, Rev. Sci. Bourbonnais xiii.—Saône-et-Loire, PIC, Bull. Soc. ent. France 1900, p. 258 and p. 61, Echange xvi.—Rennes, BLEUSE, p. 81, Bull. Soc. ent. France 1900.—Auvergne, salt springs, BRUYANT & EUSÉBIO (190).—Espèces nouvelles d'insectes *Coléoptères* trouvées en ces dernières années dans le département de Vaucluse et dans les départements limitrophes, CHABAUT, Mem. Ac. Vaucluse xix, pp. 215–220.—Contribution à la faune entomologique des Pyrénées orientales, MAYET, Miscell. ent. viii, pp. 49–55, etc.—Faunule des *Coléoptères* de la France et de la Corse, continued, DESBROCHERS, Frelon viii, pp. 1 etc. (several paginations) and ix, pp. 1–48 (double pagination).

*Hymenoptera*. BERTHOUMIEU (113), GAVOY, Aude (490).—GIARD (502), MARCHAL (852).—PÉREZ, *Prestwichia aquatica*, Bull. Soc. ent. France 1900, p. 7.—Ardennes, PIGEOT, p. 186, Bull. Soc. ent. France 1900.

*Lepidoptera*. CHRÉTIEN (250–255), DUPONT, Normandy (353).—JOANNIS (663), TUTT (1342), WALSHINGHAM (1370).—BROWN, *Nannodia eppelsheimi*, p. 295, Bull. Soc. ent. France 1900.—North France, GIARD, p. 130, Bull. Soc. ent. France 1900.—Reims, *Bembecia hylciformis*, TUNOT, p. 85, Bull. Soc. Reims iii, p. 85.—Muséum d'histoire naturelle d'Elbeuf. Catalogue. Classe des Insectes, ordre des *Lépidoptères* ou papillons (Collection française), COULON, Bull. Soc. Elbeuf xviii, pp. 1–16, sep. pag.—Paris, JOANNIS, p. 298, Bull. Soc. ent. France 1900.—Nîmes, *Thais cassandra*, MINGAUD, p. xxx, Bull. Soc. Nîmes 1899.—Nîmes, *Charaxes*, MINGAUD, t. c. p. xl.—Nîmes, GIARD, p. 214, Bull. Soc. ent. France 1900.—Bordeaux, BROWN, Pr. Verb. Soc. Bordeaux lv, p. clxviii, clxix.—l'Hérault, CHRÉTIEN, p. 377, Bull. Soc. ent. France 1900.—Hautes Alpes, TUTT, pp. 226–229, Ent. Rec. xii.—Digne, ROWLAND BROWN, pp. 57–59 etc., Ent. Rec. xii.

*Diptera*. GADEAU (477).

*Hemiptera*. *Hémiptères* recueillis à Royan et à Saint-Georges de Didonne en 1899 & 1900, LAMBERTIE, Pr. Verb. Soc. Bordeaux lv, p. clxix–clxxiv.

*Neuroptera* and *Thysanoptera*. Gironde, incl. *Thysanoptera*, DUBOIS, pp. 62–66, Feuille Natural. xxxi.

*Orthoptera*. AZAM (49), HOULBERT (610).—Normandy, *Bacillus gallicus*, LETACQ, Bull. Soc. Rouen xxxv, p. 157.—Sens, HOULBERT, pp. 77–85, Feuille Natural. xxx.—Loire-inférieure, DOMINIQUE (343).—Nîmes, *Blatta germanica*, MINGAUD, p. xlii, Bull. Soc. Nîmes 1899.

(g.) *Southern Europe and Mediterranean* [see also (a.), (b.) and (f.)].

*Insecta*. Palencia, BARRAS, pp. 168, 169, Act. Soc. Espan. 1900.—STEFANI, Sicily (1274).—SEURAT, Tunis (1202).

*Coleoptera*. KRAUSS (780), PIC (1036).—ESCALERA (380, 381), FUENTE, Spain (475).—UHAGON, Spain (1346).—STIERLIN, Spain and Roumania (1284).—PIC, Spain, Algeria, Tunis (1025).—Excursions entomologiques en Corse, VODOZ, pp. 70 etc., Miscell. ent. viii.—SAHLBERG, Corfu (1144).—DODERO, Italy (337).—FLEISCHER, Italy (424).—GETTO, Italy (496).—MEIER, Italy (884, 885).—Bologna, ALZONA, pp. 125 etc., Boll. Nat. xx.—Sui Coleotteri della provincia di Roma. Fam. *Carabidae*, Boll. Soc. rom. Zool. vii, pp. 18–33.—Salerno, LOPPA, pp. 41–45.<sup>1</sup> Italy, Sardinia, Alpes maritimes



FORMANEK, Bosnia (441).—REITTER, Bosnia (1093).—South Dalmatia, PAGANETTI-HUMMLER, pp. 115 etc., *Illustr. Zeitschr. Ent.* v.—MÜLLER, Montenegro (929).—JAQUET, Roumania, pp. 392-400. *Bull. Soc. Bucarest* ix.—ABEILLE, Smyrna, Genoa (3).—BODEMEYER, Asia Minor (131).—WEISE, Asia Minor (1396).—CHAMPENOIS, Syria (234).—PIC, Syria (1013) and pp. 85, 86, *Miscell. ent.* viii.—PIC, Palestine, p. 171, *Bull. Soc. ent. France* 1900.—BEDEL, N. Africa (87, 89).—PIC, N. Africa (1010, 1011).—VAULOGER, N. Africa (1352).—BEDEL, Algeria (84).—BOURGEOIS, Algeria (159, 162).—CHOBOUT, Algeria (245, 246).—LEWIS, Algeria (820).—PEYERIMHOFF, Algeria (996).—PIC, Algeria (1027).—PIC, Algeria and Tunis (1024).—PIC, Syria, Algeria (1009, 1021, 1034).—PIC, Algeria, Syria, Asia Minor (1023).—THÉRY, Algeria (1318).—FAUVEL, Barbary (398).—BEDEL, Tunis (85, 86).—CHOBOUT, Tunis (244).—PIC, Tunis (1028).—WATERHOUSE, Egypt (1385).

*Hymenoptera.* TOSQUINET (1325 a).—DUSMET, *Notas para el estudio de los Himenópteros de España*, iii, *Act. Soc. Espan.* 1900, pp. 132-135.—STEFANI, Italy (1275).—JAQUET, Roumania (660).—BUYSSON, N. Africa (216).—SCHMIEDEKNECHT, N. Africa (1156).—MORICE, Algeria (926).—HANDLIRSCH, Syria (555).—MARSHALL, Tunis (862).—An excursion to Egypt, Palestine, Asia Minor, etc. in search of Aculeate *Hymenoptera*, MORICE, pp. 164-172, *Ent. Mag.* xxxvi.

*Lepidoptera.* WALSINGHAM (1368).—STAUDINGER, Spain (1267).—VALLADOLID, FIGUEROA, pp. 151-153, *Act. Soc. Espan.* 1900.—KOLLMORGEN, Corsica (755).—WALSINGHAM, Corsica (1370).—Corsica and S. France, LANG, 104-108, *Entomologist* xxxiii.—LANG, Corsica, *Rhopalocera*, pp. 321-323, *Sci. Gossip.* vi.—STEFANELLI, Italy (1273).—*Lepidoptera* of Italian lakes in October, JONES, pp. 78-80, *Ent. Mag.* xxxvi.—S. Italy, *Rhopalocera*, *Sphinx*, *Bomb.*, CANNAVIELLO, pp. 58-64, 83-87, 101, *Riv. ital. Sci. Nat.* xx.—ELWES, Bulgaria (368).—Bulgarian butterflies, DE LA B. NICHOLL, pp. 29-34, 64-69, *Ent. Rec.* xii.—REBEL, Herzegovina (1074).—*Macrolépidoptera* of Roumania, concluded, FLECK, *Bull. Soc. Bucarest* ix, pp. 37-142.—WALSINGHAM, Turkey in Asia (1365).—STAUDINGER, Asia Minor (1268).—KORB, Asia Minor (758).—WARREN, Syria (1376).—Ein entomologischer Ausflug nach Nordafrika; PFITZNER, pp. 69-72, *Deutsche ent. Zeitschr. Lep.* xiii.—CHRÉTIEN, Tunis (256).

*Diptera.* RICARDO (1115), STROBL, Spain (1292).—Corsica, MARSHALL, pp. 112-114, *Ent. Mag.* xxxvi.—MIK, Sardinia (909).—BEZZI, Italy (118).—NOÈ, Italy (945).—TROTTER, Italy (1328).—HENDEL, Trieste (581).—STROBL, Bosnia, Dalmatia (1291).—GIARD, p. 260, *Bull. Soc. ent. France* 1900.—GILES, Egypt (508).

*Hemiptera.* REUTER, O. M. incl. Arabia (1105).—HORVÁTH, Spain (605).—MONTANDON, N. Africa (918).—REUTER, O. M., Morocco (1109).—BUFFA, Italy, *Coccidae* (194).—GUERCIO, Italy, *Coccidae* (543).

*Neuroptera.* *Neurópteros del Montseny* (Barcelona), NAVÁS, *Act. Soc. Espan.* 1900, pp. 92-96; del Moncayo, id. t. c. pp. 172-176; Cartagena, CACERES, t. c. p. 291.—RIBAGA, Italy (1110, 1111, 1113).—*Libellulidi* di Massa-Carrara, BENTIVOGLIO, pp. 86-91, *Atti Soc. Modena* xxxiii.—KLAPÁLEK, Bosnia and Hercegovina (734).—*Odonata*, RÖSSLER, Slavonia and Dalmatia (1133).—SJÖSTEDT, N. Africa, *Termitidae* (121).

*Orthoptera.* BOLIVAR, Spain (134).—NAVÁS, *Orthópteros del Moncayo* (Zaragoza), *Act. Soc. Espan.* 1900, pp. 140-144.—FREY-GESSNER, Roumania, pp. 149, 150, *Bull. Soc. Bucarest* ix.—BURR, Turkey (197).

*Thysanura.* GIARDINA, Italy (505).

*Collembola.* ABSOLON, Herzegovina (10).

(h.) *Caucasus* and *West and Central Asia*, including *Arabia* and *Socotra* [see also (a.) and (b.)]: for *Tibet* see 6.

*Insecta*. Addit. ad faun....Transcasp. BRANCSIK, pp. 106-134, Jahresh. Ver. Trencsin. xxi.

*Coleoptera*. BUYSSON, *Caucasus* (214).—FAUVEL, *Caucasus* (402).—FLEISCHER, *Caucasus* (425).—FORMANEK, *Caucasus* (440).—JACOBSON, *Caucasus* (640).—GAHAN, *Sokotra* (480).—TSCHITSCHÉRINE, *W. Asia* (1330).—JAKOWLEFF, *Armenia and Turkestan* (652).—REITTER, *Turkestan* (1097).—OLSOUFLEW, *W. Asia and Persia* (962).—RÉGIMBART, *Persia* (1079).—SEMENOW, *Persia* (1198).—FAUVEL, *Buchara* (404).—FLEISCHER, *Buchara* (426).—SEMENOW, *Buchara* (1200).—TSCHITSCHÉRINE, *Buchara* (1336).—WEISE, *Buchara* (1394).—JAKOWLEFF, *Centr. Asia* (657).—REITTER, *Kashgar* (1092).—REITTER, *Centr. Asia* (1096, 1100).—SEMENOW, *Centr. Asia* (1196, 1197).

*Hymenoptera*. KIRBY, *Arabia* (723).—KIRBY, *Sokotra* (723).

*Lepidoptera*. HAMPSON, *Socotra* (544).—POUJADE, *Persia* (1051).—WALSINGHAM, *Sokotra* (1367).—HERZ, *Centr. Asia* (584).—PÜNGELER, *Centr. Asia* (1060).—REBEL, *Centr. Asia* (1073).—STAUDINGER, *Thian Schan* (1269).—GRUM-GRSHIMAILO, *S. Mongolia* (541).

*Diptera*. PORTCHINSKY, *Transcaspian* (1048).

*Hemiptera*. DISTANT, *Arabia* (324).—MELICHAR, *Mongolia* (891).

*Orthoptera*. BURR, *N. Persia*, p. 240, *Ent. Rec.* xii.—ZUBOWSKY, *Turkestan* (1431).

4. AFRICA (TROPICAL & SOUTH); for NORTH AFRICA, see 3 (g): for COMORO IS., see 5; SOCOTRA, see 3 (h.).

*Insecta*. CANNAVIELLO (325), PEEL (983).

*Coleoptera*. ABEILLE (1), BELON (93), BOURGEOIS (156, 157), BRAUNS (171), BRENSKE (177), CANDÈZE (224), CLOUËT (261), CSIKI (302), FAUVEL (400), GESTRO (492, 498, 499), GORHAM (512), GROUVELLE (539), HAUSER (569), HARTMAN *Curculionidae* (564), HEATH (571), HORN (600, 601), JACOBSON, *Abyssinia and Galla-land* (642), JACOBY (644), JAKOWLEFF (651, 653), JANSON (659), KERREMANS (691), KOLBE (747, 748, 750), KRAATZ (760, 761, 762, 764, 765, 768, 770, 771, 774, 776, 778, 779).—KRAATZ, *Selteneafrikanische, Cetoniden*, *Deutsche ent. Zeitschr.* 1900, p. 16.—LESNE (816, 817), LEWIS (820, 821), OLSOUFLEW, *Somaliland*, *Tauronthophagus* (962); PÉRINGUEY (989), PIC (1001, 1008, 1014, 1017, 1022, 1032), ROUSSEAU (1140), SCHENKLING (1152), SCHWARZ, O. (1172, 1175), TSCHITSCHÉRINE (1331, 1332), WASMANN (1377, 1379), WATERHOUSE (1385), WEISE (1395, 1397, 1401, 1402).

*Hymenoptera*. BUYSSON (217, 219), FRIESE (450, 455), HANDLIRSCH (556, 558), KOHL (741, 742), MAYR (875), SAUSSURE (1149).

*Lepidoptera*. AURIVILLIUS (45), BUTLER (209), BUTLER, *Nyasaland Rhopalocera*, pp. 59-63, *Ann. Nat. Hist. v.*—DISTANT, *Pemba island* (331); FAWCETT (406), GROSE-SMITH (527, 531), HAMPSON (544, 545, p. 228, 548), JOANNIS (664), KARSCH (673, 675, 676, 678, 679), MABILLE (843), QUAIL (1061), ROTHSCHILD & JORDAN (1137), SHARPE (1213), SOUTHWORTH (1254), WARREN (1374).

*Diptera*. GILES (508), RICARDO (1115, 1116), THEOBALD (1314), WASMANN (1378).

*Aphaniptera*. ROTHSCHILD (1135).

*Hemiptera*. COCKERELL *Coccidae* (283): DISTANT (322, 324, 325, 329), KIRKALDY (727, 732), KUEHLER (920), NEWSTEAD *Coccidae* (938).

*Neuroptera.* KARSCH (674), KIRBY *Odonata* (719), KIRBY (721), KOLBE (749), R. MARTIN *Odonata* (865), SJÖSTEDT *Termitidae* (1221), SJÖSTEDT *Odonata* (1222).

*Orthoptera.* BORELLI (151), BORMANS (152), BRANCSIK (168), BURR (197, 199), KARSCH (677), KIRBY (720), DISTANT (321), DOMINIQUE (345), SJÖSTEDT (1223).

##### 5. MADAGASCAR, including SEYCHELLES and MASCARENE IS.

*Coleoptera.* ALLUAUD (22, 23, 24, 25), BRENSKE (177), CANDÈZE (224), CLOUËT (262), CSIKI (302), FAIRMAIRE (391, 394, 395, 396), FLEUTIAUX (429), HORN (600), JACOBY, p. 266, P. Zool. Soc. London 1900; JAKOWLEFF (653), KERREMANS (691), KOLBE (748), KRAATZ (761, 769, 775), MAINDRON (848), RÉGIMBART Aldabra island (1078); SCHWARZ, O. (1173, 1174), TSCHITSCHÉRINE (1331), TSCHITSCHÉRINE incl. Comores (1334).

*Hymenoptera.* DU BUYSSON (217, 218), FOREL Réunion (437 Appendice), FRIESE (449, 455), SAUSSURE (1149).

*Lepidoptera.* HAMPSON (544), JOANNIS Réunion (661), KARSCH (680), MABILLE (842), MABILLE Madagascar and Comores, Mauritius (843), SONTTHONAX (1254).

*Diptera.* LAVERAN (800).

*Aphaniptera.* ROTHSCHILD (1135).

*Hemiptera.* HORVÁTH (606), MONTANDON (920).

*Odonata.* R. MARTIN (865).

*Orthoptera.* BORMANS (152), HANCOCK (553).

##### 6. TROPICAL and EASTERN ASIA, with JAPAN.

For outskirts see also 3 (a.), (g.), (h.). ARABIA see 3 (h.).

N.B. In this division, 6, every paper that refers to India or Japan is pointed out by means of these names.

*Insecta.* KIRBY (722).

*Coleoptera.* ABEILLE Ceylon (2); BRANCSIK W. Asia (167); BRENSKE Ceylon (178); BRENSKE Siam (180); BRENSKE India (182), CANDÈZE incl. India and Tibet (224); CLOUËT Burma (260); CSIKI Malacca (298); CSIKI India, Singapore (302); DODERO Burma (336); FAIRMAIRE China, Formosa (389); GESTRO India (497, 499); GAHAN Hainan Island (482); GAHAN Formosa (481); HAUSER India (568); HORN incl. India (600); HORN India, Burma (601); JACOBY India (645); JAKOWLEFF Setschuen (649); JAKOWLEFF Cochin China (650); JAKOWLEFF China (651); KERREMANS (691), KERREMANS India (693); KRAATZ Tonkin (772); LEWIS (821), LEWIS incl. India (820); OHAUS (954), OHAUS Ceylon (955); OLIVIER India (959); PIC (1018), PIC Tenasserim (1014); PIC China and Japan (1015); PLANET India (1039, 1040), RAFFRAY India (1071); REITTER Tibet (1090); ROESCHKE Tsushima (1125); SCHENKLING Japan (1152); SCHILSKY Japan (1154); SCHWARZ, O. (1174), SEMENOW Setschuen (1192); SEMENOW China Manchuria (1194); THÉRY China (1319); TSCHITSCHÉRINE (1331), WATERHOUSE Hainan Island (1383); WEISE Ceylon and India (1400), Japan (1394).

*Hymenoptera.* ALFKEN Japan (16, 18); DU BUYSSON (217), CAMERON incl. India (221); CAMERON Japan and India (222); FOREL India (435, 486); FOREL Burma (437, appendice); FOREL Japan (438); FRIESE Malacca (455); FRIESE China (457); SZÉPLIGETI India (1304).

*Lepidoptera.* BUTLER Perak, Siam (210); CROWLEY Hainan (297); DUDGEON India (352); GRUM-GRSHIMAILO E. China & S. Mongolia (541); HAMPSON (544), HAMPSON incl. China (545); HEYLAERTS Japan (586); JOANNIS Tonkin (662); MATSUMURA Japan (867); LATHY (798), LEECH

China, Japan, Corea (807); MOORE India etc. (923); NICEVILLE (942), ROTHSCHILD India (1136); STRECKER Siam (1289); SWINHOE (1298, 1299), TETENS Malacca (1312); WALSINGHAM incl. Japan (1365); WARREN incl. Japan (1375).

*Diptera.* BECKER Singapore (82); GILES India (508); KIEFFER & TROTTER China (709); STEIN Singapore (1279).

*Hemiptera.* BREDDIN (174), BREDDIN Malacca (176); BUCKTON India (192, 193); COCKERELL Japan, *Coccidae* (280); DISTANT (322, 323, 324, 325, 328, 330), DISTANT incl. Japan (327); GREEN India, *Coccidae* (525).—List of known Indian *Coccidae*, GREEN (524); GREEN Ceylon, *Coccidae* (523); JAKOWLEFF China (656); KIRKALDY Ceylon (733); LEONARDI Ceylon, *Coccidae* (814); MATSUMURA (868); NEWSTEAD India, *Coccidae* (940).

*Neuroptera.* FOERSTER (431), KIRBY Hainan (717); R. MARTIN India (865); MORTON Japan and India (928).

*Orthoptera.* BOLIVAR India (133); BORMANS Pulo Penang (152); BURR India (197, 199).

## 7. ASIATIC ARCHIPELAGO, including PAPUA (for islands beyond Papua see 2. INSULAR).

N.B. In this division, 7, when the name of an island, or islands, is mentioned this indicates that the paper refers *only* thereto.

*Insecta.* ANDREWS Christmas Island (29); HANITSCH Kina Balu (561). Java ZEHNTNER (1424–1430).

*Coleoptera.* BOURGEOIS (158), BRENSKE Sumatra (179); CANDÈZE (224), CSIKI (298), CSIKI Java (301); CSIKI New Guinea (299, 302); CSIKI Sumatra, New Guinea (300); FAIRMAIRE Borneo (392, 393); FAUVEL Sumatra (400 p. 70 note); GESTRO Java (497); GORHAM (513), GROUVELLE & LÉVEILLÉ Sumatra (540); HARTMANN Sumatra (565); HARTMANN New Guinea (566); HELLER (573, 574), HORN (600), HORN New Guinea (601); JACOBY (646), JAKOWLEFF (650), KERREMANS (691, 693), KERREMANS Sumatra (692); KOLBE Borneo (751); KRAATZ Key Is. (763, 764); KRAATZ Sumatra (777); KRAATZ New Guinea (773); LESNE Sumatra, *Bostrychides*, Ann. Soc. ent. Belgique xliv, p. 149; LEWIS (820, 821), OHAUS (954), OLIVIER Sumatra (958); OLIVIER Borneo (960); PIC (1004, 1005); PIC Sumatra (1000, 1031); PIC N. Guinea (1002, 1003); RÉGIMBART Sumatra (1081); SCHWARZ, O. (1174), SCHWARZ, O. Sumatra (1170); SHARP Java (1208); SPAETH Sumatra (1259); TSCHITSCHÉRINE (1331), TSCHITSCHÉRINE Java (1332); WEISE Philippines (1402 p. 448).

*Hymenoptera.* ALFKEEN Java (20); EMERY (371, 375, 376), FOREL Sumatra (436); FOREL Borneo (437 appendice); MANTERO (851), MANTERO Celebes (850); MOCŠÁRY New Guinea (914); SZÉPLIGETI New Guinea (1302); SZÉPLIGETI Celebes (1304); ZEHNTNER Java (1429).

*Lepidoptera.* BUTLER Timor (210); FRUHSTORFER Philippines (471); GROSE-SMITH (527), GROSE-SMITH Celebes (528); GROSE-SMITH New Guinea (529, 530); HAMPSON (544), HOLLAND Buru (595); MOORE Borneo (923); NICEVILLE (942), PIEPERS & SNELLEN Java (1038); RÖBER (1122), ROTHSCHILD (1136), SEMPER Philippines (1201); SNELLEN (1250), SNELLEN Java and Celebes (1249); SWINHOE (1298, 1299), WALSINGHAM Java, p. 179, Ent. Mag. xxvi; WARREN (1375).—General discussion of the distribution of *Rhopalocera* in the Malay Archipelago, PAGENSTECHER (974).

*Diptera.* GILES Java (508); KERTÉSZ (695), KERTÉSZ New Guinea (696, 697); SPEISER (1262), SPEISER Sumatra (1260); SPEISER New Guinea (1264); STEIN (1276), STEIN New Guinea (1279).



*Hemiptera.* BREDDIN (172, 174, 175, 176), BREDDIN Sumatra (173); DISTANT (328), DISTANT Java (325).—Philippines, Lombok, DISTANT (327); HORVÁTH (606, 607), KIRKALDY (728), MONTANDON (917, 920).

*Neuroptera.* FÖRSTER New Guinea (432); KARSCH (672); Borneo McLACHLAN (876).

*Orthoptera.* BORMANS (152), BURR (199), BURR Borneo (198).

## 8. AUSTRALIA and TASMANIA (for NEW ZEALAND see 2. INSULAR).

*Insecta.* ILLIDGE (634).

*Coleoptera.* BLACKBURN (123, 124, 125), CANDÈZE (224), CSIKI (302), HELLER (574), KERREMANS (691), KRAATZ (773), LEA (802, 803), LEWIS (820), RAFFRAY (1070), SCHENKLING (1152), SLOANE (1233, 1234).

*Hymenoptera.* ASHMEAD (37, 39), EMERY (371), FOREL (437), FROGGATT (466), MOCSÁRY (914), TURNER (1339).

*Lepidoptera.* Gisborne and Macedon, HAASE, pp. 22-24, Victorian Natural. xvii.—HAMPSON (544, 545, p. 230), LOWER (828, 829), LYLE Tasmania (841); LUCAS (832), SWINHOE (1298, 1299), TURNER (1338), WARREN (1375), WATERHOUSE (1387).

*Diptera.* COQUILLETT (289), FROGGATT (468), GILES (508), RICARDO (1115).

*Aphaniptera.* ROTHSCHILD (1135).

*Hemiptera.* BREDDIN (174, 175), DISTANT (322, 324, 327), FROGGATT (461), FROGGATT, *Coccidae* (462); GREEN, *Coccidae* (521, 522); HORVÁTH (606, 607).

*Neuroptera.* WASMANN *Termitidae* (1070).

*Orthoptera.* FROGGATT (463).

## 9. NORTH AMERICA. Bahamas and Bermudas, see Antilles.

*Insecta.* COCKERELL & others (264); COCKERELL Arizona and New Mexico (263); GODMAN (511), FLETCHER Canada (428); SMITH New Jersey, 8,537 species (1235); Additional list of Insects taken in Alpine region of Mount Washington, SLOSSON, pp. 319-323, Ent. News Philad. xi.—Insects of the West (chiefly Colorado desert), COQUILLETT & ORCUTT, West Amer. Scient. xi, pp. 49-54.

*Coleoptera.* CASEY (229), FALL (397), HAYWARD (570), HORN (603), KERREMANS (691), LEWIS (820), PIC (1031), RIVERS (1121), SCHWARZ, E. A. Alaska (1169); WASMANN (1377), Quebec *Cicindelidae*, BEAULIEU, pp. 136 etc. Natural. Canad. xvii; *Scarabaeidae* id. t. c. p. 166 etc.—Northfield, Massachusetts, BOWDITCH, pp. 392-395, Ent. News Philad. xi.—Central Illinois, WOLCOTT, p. 468, Ent. News Philad. xi.—Breckenridge and Peak Eight, WICKHAM, pp. 597-600, Ent. News Philad. xi.—The *Cicindelidae* of Kansas, KNAUS, pp. 109-116, Canad. Ent. xxxii.—Phoenix, Arizona, GRIFFITH, pp. 561-570, Ent. News Philad. xi.

*Hymenoptera.* ASHMEAD (37, 42, 43), BASSETT (76), COCKERELL (270, 271, 273, 276-279), DYAR (355), FOREL (438), FRIESE (451, 452), HARRINGTON (563), KINCAID (713), KINCAID Alaska (712), KINCAID Alaska *Tenthredinidae* (710); MACGILLIVRAY (845), PERGANDE Alaska (988); ROBERTSON (1123), SZÉPLIGETI (1304), TITUS (1324), WHEELER Texas (1409).—New England, Ants, WHEELER, p. 47, Biol. Bull. ii.

*Lepidoptera.* BARNES (70, 71), BEUTENMÜLLER (115, 116), BUSCK (205, 206), DIETZ (318), DODGE (338), DYAR (356, 361, 363, 364, 365), DYAR Alaska (360); FERNALD (416), FRENCH (446), GROTE (538), HAMPSON

(544), HOLLAND Alaska (596); HULST (623, 624, 625, 626), MURTFELD (932), SKINNER (1225), SMITH (1236, 1237, 1238, 1239, 1240), SNYDER (1253), STRECKER (1289), WARREN Florida (1376).—Yukon, *Rhopalocera*, LYMAN, p. 119, Canad. Ent. xxxii.—Some interesting moths taken at Ottawa, GIBSON, pp. 13-19, Ottawa Natural. xiv.—Manitoba, HEATH, pp. 93-96, Canad. Ent. xxxii.—Additions to the list of Manitoba butterflies, with notes on other species, HANHAM, pp. 365-367, Canad. Ent. xxxii.—The hawk and bombycine moths of New Brunswick. Introductory list, McINTOSH, pp. 301-302, Bull. Soc. New Brunswick xix.—Silver Lake, Utah, SNYDER, pp. 363-368, Ent. News Philad. xi.—Louisiana, *Catocala*, DODGE, p. 433, Ent. News Philad. xi.—DYAR, *Dichogama*, Canad. Ent. xxxii, p. 271.—TROSCHEL, *Cocytius cluentius*, Ent. News Philad. xi, p. 324.—*Blastobasis sequella*, not N. American, WALSHINGHAM, p. 179, Ent. Mag. xxxvi.

*Diptera*. CHAGNON Quebec (233); COCKERELL (268, 269), DOANE (333), FRENCH (447), GILES (508), HOWARD (612), JOHNSON (665, 666), COQUILLETT (288, 291, 292, 293, 294, 616), COQUILLETT Alaska (290); KELLOGG (683, 685), MELANDER (889), MELANDER & BRUES (890), SNOW & MILLS (1252), WEBSTER (1388), WHEELER (1410).—Ottawa *Diptera*, HARRINGTON, pp. 127-135, Ottawa Natural. xiv.

*Hemiptera*. BAKER (55, 57), BALL (58, 59, 60), BOGUE, *Coccidae* (132), CAUDELL (230), COCKERELL (279), COCKERELL, *Coccidae* (282), DOANE *Aphidae* (334); EHRHORN, *Coccidae* (367); HEIDEMANN (572), HUNTER (628), JOHNSON, *Aphidae* (667); KING, *Coccidae* (714, 715, 716); OSBORN (967, 969, 970, 971), PERGANDE, *Aphidae* (986); PERGANDE Alaska, *Aphidae* (987); QUAINANCE, *Aleurodidae* (1065); TINSLEY & COLLEGE *Coccidae* (1322).—New Mexico, food-plants, COCKERELL, p. 302, Entomologist xxxiii.—Miscellaneous notes on *Coccidae* from Western Massachusetts, KING, pp. 116-118, Psyche ix.

*Anophora*. OSBORN (968).

*Neuroptera*. BANKS (63, 65, 66, 67), BANKS Alaska (64); TOUGH (1327), WILLIAMSON (1417).—Alaska *Mallophaga*, KELLOGG & KUWANA (686).—Indiana *Odonata*, WEITH, p. 641, Ent. News Philad. xi.—Arkansas, *Odonata*, ADAMS, pp. 621, 622, Ent. News Philad. xi.—Dragon-flies of the province of Quebec, FYLES, pp. 52-57, Rep. ent. Soc. Ontario 1900.—Maine, *Myrmeleon immaculatum*, PACKARD, p. 95, Psyche ix.

*Orthoptera*. BLATCHLEY (126), HUNTER & SUTTON Kansas (629); McNEILL (880, 882), SCUDDER Catalogue (1176); SCUDDER (1177, 1178-1181, 1183, 1184, 1185), SCUDDER & HENSHAW (1182), WHEELER (1412).—CAUDELL Alaska, P. Washington Ac. ii, p. 511.—SCUDDER, *Mantis religiosa*, Psyche ii, p. 119.—SCUDDER, localities for Western *Tryxalina*, Psyche ix, p. 95.

*Thysanura*. Maine, *Machilis variabilis*, PACKARD, p. 107, Psyche ix.

*Collembola*. HARVEY (567).

## 10. CENTRAL AMERICA (MEXICO to PANAMA incl.).

*Insecta*. GODMAN (511).

*Coleoptera*. CANDÈZE (224), CASEY (229), GORHAM (513), JACOBY (647), KERREMAN (691, 694), LÉVEILLÉ (818), LEWIS (820), MATTHEWS (870), PIC (1016), SCHENKLING (1152, 1153), SCHWARZ, O. (1174), TSCHITSCHÉRINE (1331, p. 465).

*Hymenoptera*. ASHMEAD (37), COCKERELL (279), FRIESE (450, 451, 452, 455), SZÉPLIGETI (1304).—On a small collection of bees from JUAZAR. Entomologist xxxiii, pp. 217, 218.

*Lepidoptera*. DRUCE (348), HAMPSON (544), MABEL

1900. [VOL. XXXVII.]

(1151), SNELLEN (1250), STRECKER (1289), WARREN (1376).—*Tropica* n. sp. cf. *Bombyces*.—NICARAGUA, BUTLER, pp. 189–191, Entomologist xxxiii.

*Diptera*. COQUILLETT (288).

*Hemiptera*. BAKER (56), BALL (60), CHAMPION (235), DISTANT (325, 328), OSBORN (967).

*Neuroptera*. BANKS, *Psocida*, *Planipennia*, *Trichoptera* (63). — McLACHLAN, *Odonata*, p. 189, Ent. Mag. xxxvi.

*Orthoptera*. BALL (59), BOLLLEY (122), BURR (197), HANCOCK (552), McNEILL (880), REHN (1088), SCUDDER (1176, 1179).

## 11. ANTILLES, including BERMUDAS, BAHAMAS.

*Insecta*. GODMAN (511).

*Coleoptera*. ARROW (35), CASEY, Cuba (229); CASEY, Bahamas (229, p. 67 etc.).

*Hymenoptera*. ASHMEAD (37).

*Lepidoptera*. DRUCE (348), HAMPSON (544), SCHAUS, St. Lucia (1151); SHARPE, Bahamas (1214); WARREN, including Bahamas (1376).

*Diptera*. COQUILLETT, Puerto Rico (288); SPEISER, Cuba (1261).

*Hemiptera*. BALL (60), DISTANT (325), KIRKALDY, Jamaica (731); OSBORN (967).—Puerto Rico *Coccida*, PERGANDE & COCKERELL, pp. 92, 93, Bull. U. S. Dep. Agric. Ent. xxii.

*Orthoptera*. HANCOCK, Hayti (552).

## 12. SOUTH AMERICA, including TRINIDAD.

*Insecta*. GODMAN (511).

*Coleoptera*. ARROW, Trinidad (35); AURIVILLIUS (44), BERG, Argentina (100); BOURGEOIS (157, 160), BOURGEOIS, Patagonia (155); BRENSKE, Patagonia (181); BRËTHES (183), CANDÈZE (224), FAIRMAIRE, Patagonia (390); FAUVEL, inc. Chili (399); GERMAIN, Chili (491); GORHAM (513), HORN (600, 601, 602), JACOBY (647, 648), JAKOWLEFF (649, 650), KERREMAN (691, 694), KRAATZ (767), LAMEERE, Patagonia (795); LÉVEILLÉ (818), LEWIS (820, 821), OHAUS (956, 957), PIC (1006, 1014, 1016, 1018, 1019, 1020, 1021), PIC, Chili (1032); RAFFRAY (1071), RÉGIMBART (1080), ROUSSEAU, Patagonia (1138); SCHENKLING (1152, 1153), SCHWARZ, O. (1174), SPAETH (1258), TSCHITSCHÉRINE (1331), WASMANN (1377), WATERHOUSE (1384), WEISE (1398, 1403).

*Hymenoptera*. ANDRÉ, Patagonia (28); ASHMEAD, incl. Trinidad (37); BERG, Tierra del Fuego (99); BUYSSON (217), COCKERELL (274), FOREL (438 p. 285), FRIESE (451, 452, 453, 455, 456, 458), FRIESE, including Chili (450); HOWARD, Chili (614); KRIECHBAUMER (783), SZÉPLIGETI (1304); TOSQUINET, Patagonia, Argentina (1326).

*Lepidoptera*. DANNATT (311), DOGNIN (340, 341), DRUCE (348, 349), GROSE-SMITH (527), HAMPSON (544), RIFFARTH (1118), SCHAUS (1151), SNELLEN, incl. Chili (1250); STAUDINGER (1271), STRECKER (1289), WARREN (1376).

*Diptera*. BECKER (82), HUNTER, Catalogue (630); JACOBS, Patagonia, Argentina (639); RICARDO (1117), RICARDO, incl. Chili (1115); v. RÖDER (1124), SPEISER (1261), STEIN (1280).

*Hemiptera*. BAKER (55, 57), BERG (97), BERG, Chili (102); MONTANDON (917, 920), COCKERELL, *Coccida* (284, 285, 286); HEMPEL, *Coccida* (576, 577, 578); TINSLEY & COLLEGE, Trinidad, *Coccida* (1322).

*Neuroptera*. THERESE VON BAYERN (1317), ENDERLEIN, *Psocida* (377, 378).

*Orthoptera*. BERG (101), BORMANS (152), BRUNNER, Patagonia *Steno-*

*pelmatidae* (186); BRUNNER, Tierra del Fuego (187); BURR (197, 199), GIGLIO-TOS (507), HANCOCK (551), THERESE VON BAYERN (1317).

*Thysanura*. SILVESTRI (1216).

*Collembola*. WAHLGREN, Patagonia (1362).

### PALÆO-ENTOMOLOGY.

Some American fossil (tertiary) *Coleoptera* referred to *Scolytidae*, HOPKINS (589).

*Coleoptera Bembidium berendti* from preglacial peat, Lauenberg, MEUNIER (901), n. sp.

*Hymenoptera*. Two new genera of *Mymaridae* from copal described without names, MEUNIER (902).—*Mymaridae* in amber and copal, MEUNIER pp. 362-368, Bull. Soc. ent. France 1900 (903).

*Diptera*. *Palæosynapha* n. g. *Mycetophilidae* near *Synapha*—no sp. mentioned—in amber, MEUNIER (900).—The genera of *Mycetophilidae* found in amber, MEUNIER (905).

*Hem. Heteroptera*. The spp. of *Naucoris* of Oppenheim discussed, MEUNIER (904).

*Palæoheteroptera* n. g. *Nepidae*, for *Naucoris carinata* Opp. No. 409, MEUNIER (904).

*Palæonepidoides* n. g. *Nepidae* for *Naucoris carinata* Opp. No. 41 id. (904).

### III. SYSTEMATIC.

N.B.—The reference numbers collected under the headings of the various groups refer to "Titles" on pp. 5-81, and are intended to give, in each case, a complete list of all memoirs containing anything of importance in connection with the group.

Classification of Insects, *Archipteres*, *Rhynchotes*, *Schizothoraciques*, *Zygothoraciques*, LAMEERE (794).

The ocelli of Insects, REDIKORZEW (1076).

Homologies of bases of leg, WALTON (1372).

Determination of sex, CUÉNOT (304).

Aetiology of coloration, BRUNNER (189).

List of mites found on insects, and of Insects inhabited by mites, with names of the mites LEONARDI (815).

### (A.) COLEOPTERA.

Classification: 3 suborders, *Cantharidiformes*, *Staphyliniformes*, *Carabiformes*; the series and families, LAMEERE (793).

Some notes on phylogeny, PEYERIMHOFF (997).

Number of Malpighian tubes and their value in classification, PEYERIMHOFF (998).

For notes on the earlier stages of numerous species of a variety of families, see XAMBEU (1420). These are not recorded in detail below.

Intimate metamorphosis of a beetle, NEEDHAM (936).

Anatomy of testes, BORDAS (143).

The male sexual glands and accessory organs, BORDAS (144, 145).

Ovipositor, anatomy, SEURAT (1204).



The wings of *Coleoptera*; *Clavicornia*, *Brachymeri*, *Hygrophili*, KEMPERS (687).

Stridulating organs, GAHAN (478).

Odoriferous organs, BRANDES (170).

Cases of malformation and their origin, TORNIER (1325).

Spinning beetles, Kew, pp. 168-170, *Sci. Gossip* vii.

### CICINDELIDÆ.

[Cf. ALLUAUD (22), BERG (98), BORDAS (144), CSIKI (303), FAIRMAIRE (395), HORN (600-604).]

*Cicindelidæ* divided into "*Alocosternaliæ*" and "*Platysternaliæ*," HORN, p. 214, *Ent. Nachr.* xxvi.

For extensive notes on variation of *Cicindelidæ* with numerous suggestions for the suppression of supposed species and other synonymy, see HORN, t. c. pp. 214-218.

*Cicindelidæ* of Hungary (in Hungarian), CSIKI (303).

*Cicindelidæ* of Kansas, notes on localities, etc., KNAUS, pp. 109-116, *Canad. Ent.* xxxii.

Stridulating organ of *Oxycheila*, GAHAN (478).

*Cicindelidæ* frequenting termitaria in S. America, BERG (98).

*Cicindela anthracina*, characters, p. 116, *hyperborea* and *limbata* distinguished, p. 117, *varians*, characters, p. 118, HORN, *Ent. Nachr.* xxvi; *C. silvicola*, *maura*, varr. SCHULZ, p. 159, t. c.; *C. melancholica*, subsp. *albomarginalis*, *C. kaleca* subsp. n. *humeralis*, p. 205, *C. neumanni* subsp. n. *pseudosoa*, p. 208, HORN, *Deutsche ent. Zeitschr.* 1900; *C. flexuosa*, burrows, natural history, PONSELLE (1046).

*C. (Chatostyla) andriana*, Madagascar, ALLUAUD, p. 18, *Bull. Soc. ent. France* 1900; *C. horni*, Madagascar, FAIRMAIRE, p. 134, t. c.; *C. declivis*, New Guinea, HORN, p. 364, *Deutsche ent. Zeitschr.* 1900; *C. pseudosenilis*, California, HORN, p. 117, *Ent. Nachr.* xxvi; *C. io*, N. Guinea, p. 203, *bouchardi*, Sumatra, p. 204, *waterhousi*, Ceylon, p. 206, *putzeysi*, Angola, *circumpictoides*, N. Zealand?, p. 207, *laticornis*, E. Africa, p. 208, *C. (Calochroa) angulicollis*, Dacca, p. 209, HORN, *Deutsche ent. Zeitschr.* 1900 : n. spp.

*Otenostoma simpliciceps*, Rio Janeiro, HORN, p. 361, *Deutsche ent. Zeitschr.* 1900, n. sp.

*Euryoda waageni*, Soudan, p. 198, *bucephala*, Madagascar, p. 199, *recomiliatrix*, Tenasserim, p. 200, HORN, t. c. : n. spp.

*Heptodontia arrowi*, Burma, HORN, p. 362, t. c. n. sp.

*Myrmecoptera micans*, Transvaal, HORN, p. 210, t. c.; *M. batesi*, E. Africa, HORN, p. 363, t. c. : n. spp.

*Odontochila pentacomioides*, p. 202, *cyaneomarginata* (Chaud.), p. 203, Brazil, HORN, t. c. : n. spp.

*Oxycheila haenschii*, p. 364, *affinis*, p. 365, Ecuador, HORN, t. c. : n. spp.

*Oxygonia uniformis*, Ecuador, HORN, p. 201, t. c. n. sp.

*Pogonostoma laporti*, Madagascar, HORN, p. 193, t. c.; *P. vestitum*, p. 134, *perrieri*, p. 135, Madagascar, FAIRMAIRE, *Bull. Soc. ent. France* 1900 : n. spp.

*Tetracha steinheili*, Peru, HORN, p. 211, *Deutsche ent. Zeitschr.* 1900; *T. suturalis*, p. 53, *camposi*, p. 54, Ecuador, HORN, *Ent. Nachr.* xxvi : n. spp.

*Therates rugulosus*, Sumatra, p. 194, *kraatsi*, Penang, p. 195, *gestroi*, Lakhon, p. 196, *maindroni*, Borneo, p. 197, *waagenorum*, Darjiling, p. 198, HORN, *Deutsche ent. Zeitschr.* 1900 : n. spp.

*Tricondyla (Derocrania) halyi*, p. 193, Ceylon, *longesulcata*, S. India, p. 194, HORN, t. c.; *T. gounelli*, S. India, HORN, p. 361, t. c. : n. spp.

## CARABIDÆ.

[The following memoirs relate to *Carabidæ*, viz.:—ALLUAUD (24, 25), BEDEL (84, 85, 86), BLACKBURN (123), BORDAS (124), BRANCSIK (167), DIERCKX (317), DODERO (335), FAIRMAIRE (394), FLEISCHER (425), GAHAN (478), GANGLBAUER (131, 486, 488), GESTRO (495), HAYWARD (570), HELLER (573), JACOBSON (642), KINCAID (711), MAINDRON (848), MALLÁSZ (849), MEUNIER (901), PIC (1031), REITTER (1090, 1095, 1101, 1102), RIVERS (1121), ROESCHKE (1125), ROUSSEAU (1139), SAHLBERG (1143, 1144), SCHWARZ (1169), SEMENOW (1191 to 1196), SHARP (1211), SLOANE (1233, 1234), TSCHITSCHÉRINE (1330 to 1336), WEBSTER (1389), XAMBEU (1420).]

Classification of *Harpalini*, and revision of the palæarctic genera, SEMENOW, Horæ Soc. ent. Ross. xxxiv, pp. 335–370.

Tables of the palæarctic *Harpalini*, REITTER, Verh. Ver. Brunn xxxviii.

Revision of the European blind *Bembididæ*, GANGLBAUER (486).

Stridulating organs of *Cychnus blethisa*, GAHAN (478).

*Abacetus impressicollis* (Dej. as *Distrigus*) = (*dostojewskii* Tsch.), p. 273, *A. percosioides* Fairm. = (*gagatinellus* Kolbe), p. 275, *salamensis* K. = (*kœnigi* Tsch.), p. 276, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxxiv.

*A. insularis*, Comoro islds, p. 571, *exul*, Madagascar, p. 572, TSCHITSCHÉRINE, t. c.; *A. tridens*, p. 156, *babitschewi*, p. 158, *micros*, p. 159, E. Africa, *spurius*, Java, p. 160, TSCHITSCHÉRINE, op. cit. xxxiii; *A. anthracinus*, p. 273, *orientalis*, p. 276, *idiomerus*, p. 278, E. Africa, *ornatus*, p. 279, *pictus*, Tonkin, *suspectus*, Madagascar, p. 281, *olivaceus*, Cape Colony, p. 282, *chalcopterus*, p. 283, *aratus*, Tonkin, *capicola*, S. Africa, p. 284, *nitidus*, Obock, p. 286, *nitidulus*, p. 287, *infimus*, p. 288, Madagascar, *rufescens*, Cape Colony, *longulus*, Tonkin, p. 289, *piceus*, Cochinchina, p. 290, TSCHITSCHÉRINE, op. cit. xxxiv : n. spp.

*Acupulpus immundus*, S. Europe, p. 138, *boops*, Cairo, p. 140, REITTER, Verh. Ver. Brunn xxxviii; *A. boops*, Cairo, SAHLBERG, p. 182, Ofv. Finska Forh. xlii; *A. (Egudroma) vaulogeri*, Tunis, BEDEL, p. 247, Bull. Soc. ent. France 1900 : n. spp.

*Adrimus affinis*, Venezuela, p. 245, *aneacens*, Para, p. 246, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxxiv, n. spp.

*Amara famelica* var. n. *nivium*, TSCHITSCHÉRINE, p. 328, Bull. Soc. ent. France 1900.

*Anatrichis sexstriatus*, Australia, SLOANE, p. 560, P. Linn. Soc. N. S. Wales xxiv, n. sp.

*Anchomenus gracilis* Gyll. = (*Agonum oblongum* Dej.), p. 247, *A. thoreyi* Dej. = (*melanocephalus* Dej.), p. 248, BEDEL, Bull. Soc. ent. France 1900.

*Anillus abnormis*, Corfu, SAHLBERG, p. 137, Verh. Ges. Wien I, redescribed p. 180 Ofv. Finska Forh. xlii, n. sp.

*Anisodactylus nemorivagus* var. n. *atripes*, GANGLBAUER, p. 138, BODEMEYER (131).

*Anophthalmus*, Venetian species, GESTRO, p. 567, Ann. Mus. Genova xl.

*A. gestroi*, Apennines, DODERO, p. 400, t. c.; *A. fabianii*, Venice, GESTRO, p. 570, t. c. : n. spp.

*Antarctia* referred to *Platysmatini*, TSCHITSCHÉRINE, p. 674, Horæ Soc. ent. Ross. xxxiv.

*A. racovitzi*, *subamaroides*, Patagonia, ROUSSEAU, p. 108, Ann. Soc. ent. Belgique xlv, n. spp.

*Antarctobium* subg. n. of *Platysma*, for *P. magellanicum* BL, TSCHITSCHÉRINE, p. 480, Horæ Soc. ent. Ross. xxxiv.

*Aristus curtungulus*, Syria, p. 46, *subconstrictus*, *lucidus*, W. Asia, p. 47, REITTER, Verh. Ver. Brunn xxxviii, n. spp.

- Arsenoxenus nitescens*, Borneo or Sumatra, TSCHITSCHÉRINE, p. 475, Horæ Soc. ent. Ross. xxxiv.
- Asmerinx knauthi*, Tyrol, GANGLBAUER, p. 577, Verh. Ges. Wien I, n. sp.
- Bodeliolus* n. g. near *Pogonus*, p. 577, for *B. vigil*, Transcaspian, p. 579, *pernix*, E. Persia, p. 582, n. spp., SEMENOW, Horæ Soc. ent. Ross. xxxiv.
- Bembidium tropicum* var. *abyssinicus*, CANNAVIELLO, p. 300, Bull. Soc. ent. Ital. xxxii.
- B. islandicum*, Iceland, SHARP, p. 254, Ent. Mag. xxxvi; *B. (Chlorodium) alnum*, Transcaspian, p. 174, *B. (Peryphus) giganteum*, Turkestan, p. 175, *amnicola*, Amu Daria, *B. (Lopha) albomaculatum*, Alatau, p. 177, SAHLBERG, Ofv. Finska Forh. xlii; *B. berendti*, n. sp. near *exoletum* Scudd., see Palæoentomology, p. 167 : n. spp.
- Blechnus*; revision, REITTER, pp. 369-380, Deutsche ent. Zeitschr. 1900.
- B. binotatus*, Egypt, p. 373, *fissuralis*, Greece, etc., p. 376, *fulvibasis*, *politulus*, Caucasus, p. 377, *cordatulus*, Istria, p. 378, *longulus*, East Siberia, p. 379, REITTER, t. c.; *B. schmiedeknechti*, Jericho, Pic, p. 91, Echange xvi : n. spp.
- Bothynoproctus* n. g. *Euchroini*, p. 453, for *B. mattoensis*, n. sp., Brazil, p. 454, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxxiv.
- Bradycellus koltzei*, Tibet, REITTER, p. 133, Verh. Ver. Brunn xxxviii, n. sp.
- Brososoma moritutum*, Setschuen, SEMENOW, p. 83, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Brosus anomalus* cf. *Chaetobrosus*.
- Calosoma*, examination of numerous types, synonymy, ROESCHKE (1125).
- C. glasunovi*, Turkestan, p. 303, *anthrax*, Mongolia, p. 304, *grumi*, China, p. 306, SEMENOW, Horæ Soc. ent. Ross. xxxiv; *C. grandidieri*, Madagascar, MAINDRON, p. 16, Bull. Mus. Paris 1900 : n. spp.
- Carabops* n. g. p. 261, for *C. kachovskyi*, Abyssinia, p. 263, *harrarensis*, Gallaland, p. 264, n. spp., JACOBSON, Annuaire Mus. St. Petersb. v.
- Carabus*: examination of numerous types, synonymy, ROESCHKE (1125); *C. cancellatus*, *emarginatus* as one species, BORN, p. 185, Verh. Ges. Wien I; *C. violaceus*; the varieties, RONCHETTI, pp. 117-120, Riv. ital. Sci. Nat. xx; *C. italicus* var. n. *ronchetti*, BORN, p. 184, Verh. Ges. Wien I; *C. obsoletus* var. n. *csikii*, p. 231, *C. procerus* var. n. *prunneri*, p. 232, cuts, MALLÁSZ, Potfuz. Termes. Kozl. xxxii; *C. auroniteus*, *granulatus*, varr., SCHULZ, p. 159, Ent. Nachr. xxvi; *C. comptus* varr., KRAATZ, pp. 381, 382, Deutsche ent. Zeitschr. 1900; *C. truncatocollis*, early stages, KINCAID, p. 368, pl. xxii, P. Washington Ac. ii.
- C. hissaricus*, Buchará, SEMENOW, p. 676, Horæ Soc. ent. Ross. xxxiv; *C. (Zoocarabus) kastschenkoi*, Siberia, BRANCSIK, p. 97, pl. iv, fig. 1, Jahresh. Ver. Trencsin xxi : n. spp.
- Cardiostenus* subg. n., cf. *Trichocellus*.
- Carenidium pyripenne*, Shark's Bay, SLOANE, p. 386, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Carenum*; species grouped and discussed, pp. 363-368; characters of various species, synonymy, pp. 368-372, SLOANE, t. c.
- C. emarginatum*, p. 372, *ovale*, p. 374, *lobatum*, p. 375, *serratipes*, p. 376, *tumidipes*, p. 377, *regulare*, p. 380, Australia, SLOANE, t. c., n. spp.
- Cascelius*, a valid genus, characters, SEMENOW, p. 80, Horæ Soc. ent. Ross. xxxiv.
- Casnonia cerulans* (Künck.), Madagascar, ALLUAUD, p. 410, Bull. Mus. Paris 1899; *C. sexmacula*, p. 415, *tschoffeni*, *brunneomarginata*, p. 416, *cyanocolimbata*, *lævis*, p. 418, Centr. Africa, ROUSSEAU, Ann. Soc. ent. Belgique xlv : n. spp.
- Celiatus* subg. n. of *Lesticus* for *L. andamanensis*, TSCHITSCHÉRINE, p. 186, Horæ Soc. ent. Ross. xxxiv.

- Chatauchenium* subg. n. of *Platysma*, for *P. convexipenne* Fairm. = (*Percus alienus* Reed), TSCHITSCHÉRINE, p. 461, t. c.
- Chetobroschus* n. g. for *Broschus anomalus* Chaud., SEMENOW, p. 44, t. c.
- Olivina obliquata* Putz. = (*adelaide* Blackb.), BLACKBURN, p. 35, Tr. R. Soc. S. Austral. xxiv.
- C. carinifrons*, Buchara, REITTER, p. 225, pl. ii, fig. 1, Wien. ent. Zeit. xix ; *C. eyrensis*, S. Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxiv : n. spp.
- Colliuris cerulans* and *Stenidea perrieri*, one species, ALLUAUD, p. 19, Bull. Soc. ent. France 1900.
- C. madagascariensis, suturatus*, Madagascar, ALLUAUD, p. 411, Bull. Mus. Paris 1899, n. spp.
- Colpodes placidus*, Celebes, HELLER, p. 3, pl., fig. 1, Abh. Mus. Dresden ix, No. 5, n. sp.
- Coptolabrus fruhstorferi*, Tsushima, ROESCHKE, p. 162, Ent. Nachr. xxvi, n. sp.
- Craspedonotus margellanicus* Kr. referred to *Pseudobroschus*, SEMENOW, p. 45, Horæ Soc. ent. Ross. xxxiv.
- Cratognathus*, see *Nesacrinopus*.
- Cyclothorax peryphoides* and *cordicollis* distinctions, BLACKBURN, p. 36, Tr. R. Soc. S. Austral. xxiv.
- C. cordicollis*, p. 563, *laticollis*, p. 565, Australia, SLOANE, P. Linn. Soc. N. S. Wales xxiv, n. spp.
- Cymindis lineata* and *axillaris* distinguished, GANGLBAUER, p. 139, BODEMEYER (131).
- Cynthidia*, notes on, TSCHITSCHÉRINE, pp. 217, 218, Horæ Soc. ent. Ross. xxxiv.
- Durodilia robusta*, Queensland, SLOANE, p. 579, P. Linn. Soc. N. S. Wales xxiv, n. sp.
- Dichirotrichus* (*Trichocellus*), *punctidorsis, tschitscherini*, Transcaspian, p. 125, *angularis*, E. Siberia, p. 127, *externepunctatus*, Thian-Schan, p. 128, *brudycelliformis*, Irkutsk, p. 129, REITTER, Verh. Ver. Brunn xxxviii, n. spp.
- Drimostoma humerosum* var. n. *dilutipes*, TSCHITSCHÉRINE, p. 265, Horæ Soc. ent. Ross. xxxiv ; *D. fuscipes* Br. referred to *Adrimus*, characters, TSCHITSCHÉRINE, p. 244, t. c.
- D. fatuum*, Congo, p. 264, *ambiguum*, p. 266, *conforme*, Madagascar, *procerulum*, Comores, p. 268, TSCHITSCHÉRINE, t. c., n. spp.
- Dromius cordicollis*, note, VORBRINGER, p. 302, Ent. Nachr. xxvi ; *D. accentifer* Raffr. referred to *Metabletus*, redescribed, SAHLBERG, p. 181, Ofv. Finska Forh. xlii ; *D. opacicolor* referred to *Microduccus*, REITTER, p. 242, Wien. ent. Zeit. xix.
- D. pilifer*, p. 12, *dendrobates*, p. 13, Algeria, BEDEL, Bull. Soc. ent. France 1900 ; *D. caucasicus*, W. Caucasus, SEMENOW, p. 88, Horæ Soc. ent. Ross. xxxiv ; *D. australiensis*, Australia, SLOANE, p. 583, P. Linn. Soc. N. S. Wales xxiv : n. spp.
- Epactius* (*Omophron*) *grandidieri*, Madagascar, ALLUAUD, p. 409, Bull. Mus. Paris 1899, n. sp.
- Epikarpalus* subg. n. of *Harpalus*, REITTER, p. 75, Verh. Ver. Brunn xxxviii.
- Eucamptognathus*, table of species, TSCHITSCHÉRINE, pp. 109–117, Horæ Soc. ent. Ross. xxxiv.
- E. granulifer*, p. 118, *bouvieri*, p. 121, *lesnei*, p. 125, Madagascar, TSCHITSCHÉRINE, t. c. ; *E. ikopa*, Madagascar, TSCHITSCHÉRINE, p. 574, t. c. : n. spp.
- Eucarterus* n. g., p. 37 and p. 53, for *sparsutus* Reitt., REITTER, Verh. Ver. Brunn xxxviii.
- Eudalia niger*, N. S. Wales, SLOANE, p. 581, P. Linn. Soc. N. S. Wales xxiv, n. sp.



- Eudromus ankavandra*, Madagascar, TSCHITSCHÉRINE, p. 455, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Eutanyx* subg. n. of *Platysma*, p. 457, for *P. arctum*, *extenuatum*, n. spp., Chili, p. 458, TSCHITSCHÉRINE, t. c.
- Eutoma levissime*, N. Australia, SLOANE, p. 384, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Feroniola* n. g. for some species of *Antarctia* and *Harpalus*, p. 666, with *F. famelica*, Patagonia, p. 669, n. sp., TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxxiv.
- Feroniomorpha* revised, TSCHITSCHÉRINE, pp. 371–392, t. c.
- Gnathaphanus*; synonymy and characters of numerous, SLOANE, pp. 553–555, P. Linn. Soc. N. S. Wales xxiv; *G. latus*, p. 555, *herbaceus*, p. 556, Australia, id. t. c. : n. spp.
- Glycia tschitscherini*, Buchara, SEMENOW, p. 681, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Harpalobius* subg. n. of *Harpalus*, REITTER, p. 76, Verh. Ver. Brunn xxxviii.
- Harpaloderus* subg. n. of *Harpalus*, REITTER, t. c.
- Harpaloxys* subg. n. of *Harpalus*, REITTER, p. 75, t. c.
- Harpalus caliginosus*, destructive to strawberries, WEBSTER (1389).
- H. (Artabas) chobauti*, Albaron, p. 78, *H. (Epiharpalus* subg. n.) *torridoi*, Irkutsk, p. 81, *tithonus*, Mardin, p. 62, *tiridates*, Syria, p. 83, *cyclopius*, Turkestan, p. 84, *aneolus*, Portugal, p. 86, *H. (Lasioharpalus* subg. n.) *subangulatus*, *salinulus*, Asia Minor, p. 86, *tenuelimbatus*, Portugal, p. 87, *decoloratus*, France etc. p. 91, *H. (Harpaloderus* subg. n.) *janus*, Spain, p. 102, *H. (Harpalobius* subg. n.) *satanas*, Tunis, p. 104, *mihatschi*, Araxes Valley, p. 106, *skutariensis*, Albania, p. 107, *danieli*, *lubricus*, Asia Minor, p. 108, *amator*, S. Russia, p. 110, *H. (Actephilus)* *acupalpoides*, p. 112, *bradycelloides*, p. 113, Mongolia, *H. (Pheuginus)* *albancus*, Albania, p. 114, *tingens*, p. 115, *strasseri*, Circassia, *relator*, S. Russia, p. 116, *pulchrinulus* hab.?, p. 118, *pseudoserripes*, Turkestan, *amicus*, Amasia, p. 121, REITTER, Verh. Ver. Brunn xxviii : n. spp.
- Harpaloner marginatus* Maccl., referred to *Thenarotes*, SLOANE, p. 560, P. Linn. Soc. N. S. Wales xxiv.
- Hexagonia cephalotes*, habitat and synonymy, ALLUAUD, p. 412, Bull. Mus. Paris 1899.
- Holconotus madagascariensis*, Madagascar, TSCHITSCHÉRINE, p. 291, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Homalosoma*, table of species, SLOANE, p. 567, P. Linn. Soc. N. S. Wales xxiv.
- H. crassiforme*, p. 570, *porphyriacum*, p. 571, Australia, id. t. c. n. spp.
- Hoplauchenium* subg. n. of *Platysma*, for *P. minax* n. sp. Persia, TSCHITSCHÉRINE, p. 510, Horæ Soc. ent. Ross. xxxiv.
- Lacocopterum humeralis*, N. W. Australia, SLOANE, p. 361, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Lamostenus (Antisphodrus) bodemeyeri*, Asia Minor, GANGLBAUER in BODEMEYER, p. 134 (131) n. sp.
- Lasioharpalus* subg. n. of *Harpalus*, REITTER, p. 75, Verh. Ver. Brunn xxxviii.
- Leirides transcaspia*, Ashabad, BRANCSIK, p. 98, Jahresh. Ver. Trencsin. xxi, n. sp.
- Leistus relictus*, Buchara, SEMENOW, p. 679, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Lesticus (Triptogenius) viridicollis*, var. n. *concolor*, p. 177, TSCHITSCHÉRINE, t. c.
- L. costiger*, p. 165, *harmandi*, p. 167, *L. (Triptogenius) indus*, p. 169, Sikkin, *lakhonus*, Siam, p. 171, *nubilus*, Cochinchina, p. 173, *auricollis*, Bangkok, p. 174, *prasinus*, Sulu, *laticolor*, Java, p. 178, TSCHITSCHÉRINE, t. c. n. spp.

- Licinus mongolicus*, N. Mongolia, REITTER, p. 151, Verh. Ver. Brunn xxxviii, n. sp.
- Lionychus unicolor*, Caucasus, FLEISCHER, p. 233, Wien. ent. Zeit. xix, n. sp.
- Loxandrus catharinæ*, p. 223, *fuscatus*, Brazil, *pictus*, p. 225, *flavicauda*, *fasciolatus*, p. 227, Venezuela, *interruptus*, Colombia, p. 228, *mattoanus*, Brazil, p. 229, *ater*, Venezuela, p. 230, *rusticornis*, Brazil, p. 233, *argentinus*, Buenos Ayres, p. 234, *subfuscus*, Brazil, p. 237, *bolivianus*, Chuquisaca, p. 238, *integer*, Argentine, p. 239, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxxiv : n. spp.
- Macrochilus nigrotibialis*, Celebes, HELLER, p. 2, Abh. Mus. Dresden ix, No. 5, n. sp.
- Murayus bahiæ*, Brazil, TSCHITSCHÉRINE, p. 216, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Meonis convexus*, New South Wales, SLOANE, p. 562, P. Linn. Soc. N. S. Wales xxiv, n. sp.
- Meraulax* subg. n. of *Platysma*, for *P. alatum* Br., TSCHITSCHÉRINE, p. 393, Horæ Soc. ent. Ross. xxxiv.
- Meropalpus* n. g. near *Marsyas*, p. 206, for *Feronia nobilis* Brullé, and *M. irridians* n. sp. Bahia, p. 211, TSCHITSCHÉRINE, t. c.
- Metamelanius* subg. n. of *Platysma* for *P. ebeninum* Dej., TSCHITSCHÉRINE, p. 395, t. c.
- Metrius sericeus*, California, RIVERS, p. 389, Ent. News Philad. xi, n. sp.
- Microcephalus*; characters of species, TSCHITSCHÉRINE, pp. 450-452, Horæ Soc. ent. Ross. xxxiv.
- Molops piceus*, *ovipennis*, distinguished, GANGLBAUER, p. 138, BODEMEYER (131).
- Nebria kincaidi*, Alaska, SCHWARZ, p. 525, P. Washington Ac. ii, n. sp.
- Nesacinopus* n. g. for the Canarian and Madeiran *Cratognathus*, SEMENOW, pp. 353 and 359, Horæ Soc. ent. Ross. xxxiv.
- Notiophilus orientalis* Chaud., redescribed, SPÆTH, p. 50, Verh. Ges. Wien l.
- Omophron clavareau*, Congo, ROUSSEAU, p. 412, Ann. Soc. ent. Belgique xlv, n. sp.
- Omphreoides bucculentus*, Madagascar, ALLUAUD, p. 413, Bull. Mus. Paris 1899, n. sp.
- Oodes cuneatus* Fairm. to *Abucetus*, TSCHITSCHÉRINE, p. 275, Horæ Soc. ent. Ross. xxxiv.
- Ophonus battus*, Syria, p. 60, *clypealis*, Kurdistan, p. 62, *griseoides*, Russia, p. 63, *pseudazureus*, p. 64, *complicans*, p. 65, *pterosichus*, p. 66, W. Asia, *amenuus*, Araxes Valley, p. 67, *O. (Parophonus) grandiceps*, Syria, p. 69, REITTER, Verh. Ver. Brunn xxxviii : n. spp.
- Ophryogaster*; *Feroniomorpha sculptilis* referred to, TSCHITSCHÉRINE, p. 373, Horæ Soc. ent. Ross. xxxiv.
- Oxycrepis*, characters, TSCHITSCHÉRINE, p. 220, t. c.
- O. cordata*, p. 221, *brasilensis*, p. 222, Brazil, id. t. c. n. spp.
- Pangus roseni*, Transcaspien, BRANCSIK, p. 98, Jahresh. Ver. Trencsin xxi, n. sp.
- Paranoëtes* subg. n. of *Platysma*, for *P. cordicollis* Dej., TSCHITSCHÉRINE, p. 394, Horæ Soc. ent. Ross. xxxiv.
- Parhypates* Motsch., characters and species, TSCHITSCHÉRINE, p. 463, t. c.
- Pedionomorphus macleayi*, p. 577, *rusticollis*, p. 578, Australia, SLOANE, P. Linn. Soc. N. S. Wales xxiv : n. spp.
- Percosia politissima*, Lebanon, REITTER, p. 81, Deutsche ent. Zeitschr. 1900, n. sp.
- Pheropsophus bohemani*, pygidial glands, DIERCKX (317).
- Physolesthus rusticollis*, N. S. Wales, SLOANE, p. 581, P. Linn. Soc. N. S. Wales, xxiv, n. sp.

- Plagioplatys* subg. n. of *Platysma*, p. 471, for *P. vagans* Dej., TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxxiv.
- Platyderus elegans*, Tunis, BEDEL, p. 170, Bull. Soc. ent. France 1900, n. sp.
- Platysma*: subgen. see *Antarctobium*, *Chatauchenium*, *Eutanyx*, *Feroniomorpha*, *Hoplauchenium*, *Meraulax*, *Metamelaninus*, *Paranortes*, *Parhy-pates*, *Plagioplatys*, *Ophryogaster*, *P.* subg. *Bothriopterus*, revision, TSCHITSCHÉRINE, pp. 606-613, Horæ Soc. ent. Ross. xxxiv; *P. (Feroniomorpha) orbignyi* n. n. for *obtusum* Br., SEMENOW, p. 377, t. c.
- P. (Hypherpes) oscitans*, Mexico, p. 465, *P. (Pterostichus) harmandi*, p. 467, *dolens*, p. 469, Sikkim, *P. (Blennidus) fontainei*, Chili, p. 470, *P. (Argutoridius) pavens*, Brazil, p. 474, TSCHITSCHÉRINE, t. c.; *P. (Percosteropus) iranicus*, Persia, TSCHITSCHÉRINE, p. 513, t. c.: n. spp.
- Pseudaristatus* n. g. p. 34 and p. 48, for *A. modestus* Schaum, REITTER, Verh. Ver. Brunn xxxviii.
- Pseudobrosca*, a valid genus, characters, SEMENOW, p. 43, Horæ Soc. ent. Ross. xxxiv.
- Pseudoderus capito*, Buchara, TSCHITSCHÉRINE, p. 329, Bull. Soc. ent. France 1900, n. sp.
- Pselonothus* n. g. p. 557, near *Thenarotidius*, for *P. ocalis* n. sp., Australia, p. 558, SLOANE, P. Linn. Soc. N. S. Wales xxiv.
- Pterostichus agonoderus* var. n. *bodemeyeri*, GANGLBAUER, p. 135, BODEMEYER (131).
- P. phylarchus*, N. S. Wales, SLOANE, p. 572, P. Linn. Soc. N. S. Wales xxiv, n. sp.
- Rhathymus*, characters, TSCHITSCHÉRINE, pp. 448-450, Horæ Soc. ent. Ross. xxxiv.
- Sarothrocrepis humeratus*, Victoria, SLOANE, p. 582, P. Linn. Soc. N. S. Wales xxiv, n. sp.
- Scotodipnus brevipennis* var. n.,? sp. n., *serbicus*, p. 159, *S. glaber armellini* subsp. n., p. 164, GANGLBAUER, Verh. Ges. Wien I.
- S. muelleri*, Morea, p. 168, *fiori*, Italy, p. 172, GANGLBAUER, t. c. n. spp.
- Siagona hovana*, Madagascar, FAIRMAIRE, p. 85, Bull. Soc. ent. France 1900, n. sp.
- Simodontus*, p. 573, *mandibularis*, p. 574, *laviceps*, p. 575, Australia, SLOANE, P. Linn. Soc. N. S. Wales xxiv, n. spp.
- Singilis soror* = (*maroccana* Fairm.), BEDEL, p. 248, Bull. Soc. ent. France 1900.
- Stomonaarus striaticollis*, *rufipes*, *japonicus*, characters, synonymy, SEMENOW, pp. 261-264, Horæ Soc. ent. Ross. xxxiv.
- Tachys*, monograph of the N. American, 45 species divided into nine groups, HAYWARD, Tr. Amer. ent. Soc. xxvi, pp. 191-238.
- T. centralis*, Transcaspian, p. 178, *humeralis*, Tunis, p. 179, SALBERG, Ofv. Finska Forh. xlii; *T. mulcalensis*, Australia, SLOANE, p. 566, P. Linn. Soc. N. S. Wales xxiv; *T. falli*, p. 199, *liebecki*, p. 207, *frontalis*, p. 212, *bradycellinus*, p. 224, *latipennis*, p. 227, *columbiensis*, p. 231, N. America, HAYWARD, Tr. Amer. ent. Soc. xxvi: n. spp.
- Tetragonoderus perrieri*, Madagascar, FAIRMAIRE, p. 86, Bull. Soc. ent. France 1900, n. sp.
- Thenarotes bicolor*, p. 558, *tachioides*, p. 559, Australia, SLOANE, P. Linn. Soc. N. S. Wales xxiv, n. spp.
- Trachelocyphus* n. g., p. 270, for *Abacetus*? *trisulcis* Chaud. and *T. enigmaticus* n. sp., Sierra Leone, p. 272, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxxiv.
- Trechus nigrinus* var. n. *anatolicus*, GANGLBAUER, p. 134, BODEMEYER (131); *T. baldensis pasubianus*, GANGLBAUER, p. 576, Verh. Ges. Wien I.
- T. wienckei*, Patagonia, ROUSSEAU, p. 108, Ann. Soc. ent. Belgique xliv, n. sp.

- Trichocellus*, supplementary revision, TSCHITSCHÉRINE, pp. 52–58, Horæ Soc. ent. Ross. xxxiv.  
*T. (Cardiostenus* subg. n.) *parvicollis*, Transcaspiian, TSCHITSCHÉRINE, t. c. n. sp.  
*Trigonotomini*, revision of species of Malay Archipelago, TSCHITSCHÉRINE, pp. 180–198, t. c.  
*Trigonotoma funebris*, p. 153, Siam, *aurifera*, p. 155, Cambodia, *leotandi*, Philippines, p. 158, *cauta*, Ternate, p. 159, *adoxi*, Cochin China, p. 162, *morosa*, Cambodia, p. 164, *cyanella*, Cochin China, p. 165, TSCHITSCHÉRINE, t. c. n. spp.  
*Tropidocerus flavipes*, p. 537, *dispar*, p. 539, Senegal, TSCHITSCHÉRINE, t. c. n. spp.  
*Zabrus gibbus*, parasites, PORTA (1047).

## HALIPLIDÆ.

- Haliplus variegatus* var. n. *pallidior*, MÜLLER, p. 115, Verh. Ges. Wien I.  
*H. dalmatinus*, p. 113, with var. *weberi*, MÜLLER, p. 114, t. c.; *H. leopardinus*, Corcyra, SAHLBERG, p. 183, Ofv. Finska Forh. xlii : n. spp.

## DYTISCIDÆ.

- [Cf. BORDAS (144), GANGLBAUER (131), RÉGIMBART (1078 to 1081), REITTER (1095), SEMENOW (1196).]  
*Agabus tristis*, early stages, KINCAID, p. 371, pl. xxiii, figg. 3–6, P. Washington Ac. ii.  
*Amarodytes* n. g., p. 524, for *A. percosioides*, p. 525, *oberthuri*, *boggianii*, p. 526, *testaceo-pictus*, p. 527, n. spp., S. America, and *Hydroporus duponti*, Aubé, RÉGIMBART, Ann. Mus. Genova xl : n. spp.  
*Anagabus limbibasis*, Buchara, REITTER, p. 226, pl. ii, f. 3, Wien. ent. Zeit. xix, n. sp.  
*Bidessodes* n. g., p. 528, for *B. semistriatus*, p. 529, *fragilis*, p. 530, n. spp., S. America, and *Bidessus elongatus* Sharp, RÉGIMBART, Ann. Mus. Genova xl.  
*Copelatus pulchellus*, var. from Aldabra, RÉGIMBART, p. 50, Bull. Soc. ent. France 1900.  
*C. weyersi*, Sumatra, RÉGIMBART, p. 148, Ann. Soc. ent. Belgique xlv, n. sp.  
*Deronectes abnormicollis*, p. 682, *microthorax*, p. 683, Buchara, SEMENOW, Horæ Soc. ent. Ross. xxxiv, n. spp.  
*Dytiscus dauricus*, early stages, KINCAID, p. 370, P. Washington Ac. ii.  
*Hydroporus bodemeyeri*, Asia Minor, GANGLBAUER, p. 139, BODEMEYER (131), n. sp.  
*Laccophilus weyersi*, Sumatra, RÉGIMBART, p. 147, Ann. Soc. ent. Belgique xlv, n. sp.  
*Platambus esculerai*, Persia, RÉGIMBART, p. 121, Bull. Soc. ent. France 1901, n. sp.

## GYRINIDÆ.

- Variability of sculpture, MÜLLER, p. 120, Verh. Ges. Wien I.



## HYDROPHILIDÆ.

[Cf. CASEY (229), DEEGENER (313), GAHAN (478), RÉGIMBART (1078), SAHLBERG (1143), SEMENOW (1193, 1195, 1197).]

Development of trophi and alimentary canal of *Hydrophilus*, DEEGENER (313).

Stridulation of *Hydrophilus*, GAHAN (478).

*Ametor* n. g. near *Hydrocycclus*, p. 614, for *A. rudesculptus* n. sp., W. Turkestan, p. 617, SEMENOW, Horæ Soc. ent. Ross. xxxiv.

*Berosus bergrothi*, Aldabra Is., RÉGIMBART, p. 41, Bull. Soc. ent. France 1900, n. sp.

*Cælostoma hispanicum*, pupa, BILLECOQ, p. 138, Bull. Soc. ent. France 1900.

*Helochares nigrifrons* Brancs., note on, RÉGIMBART, p. 50, Bull. Soc. ent. France 1900.

*Helophorus glacialis* var. n. *deubeli*, KRAUSS, p. 239, Wien. ent. Zeit. xix.

*H. jakolevi* (= *elongatus* Kuw. nec Motsch.), Russia, SEMENOW, p. 89, Horæ Soc. ent. Ross. xxxiv; *H. mervensis*, Transcaspian, SEMENOW, p. 587, t. c. : n. spp.

*Hoplydræna*; revision, PORTA, pp. 7-9, pl. i, Miscell. ent. viii.

*Hydrophilus* (*Hydrocharis* auct.), table of palæarctic, SEMENOW, pp. 585-587 and 688, Horæ Soc. ent. Ross. xxxiv; *H. piceus*, stridulation and copulation, DONISTHORPE, p. 291, Ent. Rec. xii.

*H. profanifuga*, Transcaspian, p. 583, *sartus*, Bucharâ, p. 584, SEMENOW, Horæ Soc. ent. Ross. xxxiv, n. spp.

*Laccobius argillaceus*, p. 188, *sublavis*, *littoralis*, p. 189, Turkestan, SAHLBERG, Ofv. Ak. Forh. xlii, n. spp.

*Læliæna* n. g. near *Hydræna*, for *L. sparsa* n. sp., Turkestan, SAHLBERG, p. 203, Ofv. Finska Forh. xlii.

*Limnebius*; table of N. American, *piceus* Horn (= *politus* Cas.), CASEY, J. N. York Ent. Soc. viii; *L. (Embololimnebius) theryi*, sexes described, SAHLBERG, p. 191, Ofv. Finska Forh. xlii.

*L. (E.) appendiculatus*, Algeria, id. p. 192, t. c.; *L. discolor*, Vermont, CASEY, p. 52, J. N. York Ent. Soc. viii : n. spp.

*Liochthebius* subg. n., cf. *Octhebius*.

*Micragasma* n. g. near *Octhebius*, p. 199, for *M. paradoxum* n. sp., Corcyra, p. 201, SAHLBERG, Ofv. Finska Forh. xlii.

*Octhebius* (*Prionochthebius*) *asper*, Athens, p. 193, *O. (Cheilochthebius) sculpturatus*, Transcaspian, p. 194, *eliseæ*, Palestine, *O. (Trymochthebius) depressus*, Turkestan, p. 195, *O. latiusculus*, Jordan, p. 196, *rugulosus*, Corcyra, p. 197, *O. (Liochthebius* subg. n.) *eburneus*, Tunis, p. 198, SAHLBERG, t. c. : n. spp.

*Philhydrus mediterraneus*, Italy, etc., p. 185, *salomonis*, Bethlehem, p. 187, SAHLBERG, t. c. : n. spp.

*Volulus cupreus*, Aldabra Is., RÉGIMBART, p. 51, Bull. Soc. ent. France 1900, n. sp.

## STAPHYLINIDÆ.

[Cf. ABELLE (3), BERNHAUER (107 to 111, 131), BORDAS (144), BRÈTHES (183), CASEY (229), DODERO (335, 337), FAUVEL (398 to 404), GAHAN (479), GANGLBAUER (487), HELLER (573), KRAATZ (767), LOKAY (826), LUZE (840), PEYERIMHOFF (995, 997), REITTER (1095, 1099), SEMENOW (1196), SHARP (1210), WASMANN (1377), XAMBEU (1420).]

*Staphylinidæ* not primitive and not related to *Forficulidæ*, PEYERIMHOFF (997).

- Staphylinidæ* living on *Rodentia*, FAUVEL, p. 61, Rev. Ent. franc. xix.
- Achenopsis* n. g. near *Achenium*, for *A. inequalis*, Sumatra, p. 70, *æqualis*, Congo, p. 71, n. spp., FAUVEL, t. c.
- Adda* n. g. near *Notothecta*, p. 73, for *A. æthiopica*, n. sp., Africa, FAUVEL, t. c.
- Aenicionia* n. g. *Myrmedoniina*, p. 268, for *Ae. cornigera*, n. sp., S. Africa with *Ænictus eugenii*, p. 270, pl. xiv, f. 21, WASMANN, Zool. Jahrb. Syst. xiv.
- Aleochara* (*Ceranota*) *bituberculata*, Asia Minor, BODEMEYER (131), BERNHAUER, p. 141 and p. 48, Wien. ent. Zeit. xix; *A. (Ceronota) hydrocephala*, p. 245, *diversicollis*, *opacina*, p. 246, France, *A. navicularis*, Irkutsk, *ignipennis*, Persia, p. 247, *parvicornis*, Sarepta, *arachnipes*, Turkestan, p. 248, *capitata*, Bucharra, p. 249, FAUVEL, Rev. Ent. franc. xix; *A. densula* (Fauv.), Brazil with *Eciton foreli*, WASMANN, p. 240, Zool. Jahrb. Syst. xiv : n. spp.
- Alianta bipartita*, France and Corsica, FAUVEL, p. 243, Rev. Ent. franc. xix, n. sp.
- Aloconota bodemeyeri*, Asia Minor, BERNHAUER, p. 142, BODEMEYER (131) and p. 52, Wien. ent. Zeit. xix, n. sp.
- Amblyopinus* and *Myotyphlus* (= *Cryptommatus* Matth.), characters, synonymy, FAUVEL (399).
- A. brandesi*, Peru, KRAATZ, p. 212, Deutsche ent. Zeitschr. 1900; *A. germani*, Peru, p. 63, *waterhousei*, Ecuador, p. 64, FAUVEL, Rev. Ent. franc. xix : n. spp.
- Anthobium densipenne*, Erzeroum, *cribrellum*, Calabria, p. 218, *albipilis*, Tyrol, p. 219, FAUVEL, t. c. n. spp.
- Anthophagus spectabilis* var. n. *muelleri*, BERNHAUER, p. 539, Verh. Ges. Wien I.
- A. bosnicus*, Sarajevo, BERNHAUER, p. 539, t. c. n. sp.
- Astenus siculus*, Sicily, *walkeri*, Malta, p. 224, *notatus*, *pictipennis*, Persia, p. 225, FAUVEL, Rev. Ent. franc. xix, n. spp.
- Astilbus akinini* referred to *Myrmecopora*, REITTER, p. 242, Wien. ent. Zeit. xix.
- A. meridianus*, S. Europe, FAUVEL, p. 244, Rev. Ent. franc. xix, n. sp.
- Atheta* (*Hydrossecta*) *gracilicornis* var. n. *flavipennis*, BERNHAUER, p. 537, Verh. Ges. Wien I; *A. longula*, aberration, BERNHAUER, p. 42, t. c.
- A. æquinotialis*, Congo, FAUVEL, p. 73, Rev. Ent. franc. xix; *A. alpigrada*, Alps, *A. (Aloconota) diodon*, France, p. 239, *grandicornis*, Tyrol, p. 240, FAUVEL, t. c.; *A. (Oreostiba) spurnyi*, Tyrol, *A. (Microdota) bufonis*, Vienna, BERNHAUER, p. 40, Verh. Ges. Wien I; *A. dolomitana*, Tyrol, p. 534, *A. (Metaxya) polaris*, Norway, p. 536, BERNHAUER, t. c.; *A. (Geostiba) incisa*, Digne, PEYERIMHOFF, p. 9, Bull. Soc. ent. France 1900; *A. normandi*, p. 59, *bikamata*, p. 60, Tunis, FAUVEL, Rev. Ent. franc. xix; *A. rugosicollis*, Armenia, p. 49, *A. (Tetropla) circassica*, Circassia, p. 50, *A. (Hydrossecta) pallidicollis*, Turkestan, p. 52, BERNHAUER, Wien. ent. Zeit. xix : n. spp.
- Blediotrogus* n. g. near *Trogophleus*, for *B. guttiger*, n. sp., New Zealand, SHARP, p. 234, Ent. Mag. xxxvi.
- B. cribricollis*, New Zealand, FAUVEL, p. 184, Rev. Ent. franc. xix, n. sp.
- Bledius hispidulus* = (*morio* Heer), FAUVEL, p. 161, t. c.
- B. gabonensis*, *curticornis*, p. 68, *aculeatus*, p. 69, Congo, FAUVEL, t. c.; *B. ampicollis*, New Zealand, FAUVEL, p. 185, t. c. : n. spp.
- Callicerus muensteri*, Genzano, BERNHAUER, p. 533, Verh. Ges. Wien I, n. sp.
- Calliderma obsoletum*, Congo, FAUVEL, p. 71, Rev. Ent. franc. xix, n. sp.
- Chitosa* n. g. for *Dinarda nigrita* Ros., CASP. -  
viii.
- Conurus tropicus*, Congo, FAUVEL, p.

- Coprophilus dimidiatipennis*, Askhabad, FAUVEL, p. 223, t. c. n. sp.  
*Coproporus pumilio*, cf. *Dictyon*.  
*Cryptobium severini*, Congo, FAUVEL, p. 72, t. c. n. sp.  
*Ctenomastax varicolor*, Andalusia, Tunis, FAUVEL, p. 57, t. c. n. sp.  
*Cyrtotyphlus* n. g. near *Leptotyphlus*, p. 401, for *C. convexus* n. sp., Liguria, p. 402, cut, DODERO, Ann. Mus. Genova xl.  
*Decusa* n. g. for *Homœusa expansa* Lec., CASEY, p. 54, J. N. York Ent. Soc. viii.  
*Delcaster bactrianus*, Buchara, SEMENOW, p. 684, Horæ Soc. ent. Ross. xxxiv, n. sp.  
*Deliphrum* (*Mannerheimia*) *micros*, Turkestan, FAUVEL, p. 222, Rev. Ent. franc. xix, n. sp.  
*Dictyon* n. g. *Tachyporini* anomalous, for *Coproporus pumilio* Epp., FAUVEL, p. 160, t. c.  
*Diestota testacea* Kr. (= *mayeti* Rey), FAUVEL, p. 245, t. c.  
*Digrammini*, new tribe near *Aleocharini*, approaching *Oxytelini*, for the following,  
*Digrammus* n. g., p. 123, for *D. miricollis*, n. sp., Auckland, p. 124, FAUVEL, t. c.  
*Dinarda*, cf. *Chitosa*.  
*Diachus senegalensis*, Congo, FAUVEL, p. 72, t. c. n. sp.  
*Dorylostethus ruffrayi*, S. Africa, with *Dorylus*, WASMANN, p. 266, pl. xiv, fig. 20, Zool. Jahrb. Syst. xiv, n. sp.  
*Doryloxenus tujæ*, Congo, with *Anomma wilverthi*, WASMANN, p. 263, pl. xiv, fig. 19, t. c. n. sp.  
*Ecitodulus* n. g. *Aleocharini*, p. 233, for *E. crassicornis* n. sp., Brazil, with *Eciton legionis*, p. 235, pl. xiii, fig. 4, WASMANN, t. c.  
*Ecitogaster* n. g. *Aleocharini*, p. 218, for *E. schmalzi* n. sp., Brazil, with *Eciton predator*, p. 224, pl. xiii, fig. 1, WASMANN, t. c.  
*Ecitonides* referred to *Paderini* near *Echiaster*, characters, WASMANN, pp. 247-249, t. c.  
*E. longiceps*, pl. xiv, fig. 15, *brevicornis*, Brazil, with *Eciton cœcum*, WASMANN, p. 249, t. c. n. spp.  
*Ecitonidia* n. g. *Aleocharini*, p. 283, for *E. wheeleri* n. sp., Texas, p. 284, WASMANN, t. c.  
*Ecitophya* n. g. for *Ecitonomorpha simulans* Wasm., WASMANN, p. 224, pl. xiii, fig. 2, t. c.  
*Ecitopora major*, Brazil, with *Eciton quadriglume*, WASMANN, p. 238, t. c.; *E. tenella*, Texas, WASMANN, p. 284, t. c. : n. spp.  
*Ecitozenia* n. g. *Aleocharini*, p. 231, for *E. mirabilis* n. sp., Brazil, with *Eciton quadriglume*, p. 233, pl. xiii, fig. 3, WASMANN, t. c.  
*Ecitozenus* n. g. *Xenocephalini* = *Cephaloplectini*, p. 245, for *E. heyeri* n. sp., Brazil, with *Eciton cœcum*, p. 247, pl. xiv, fig. 14, WASMANN, t. c.  
*Edrabiis* n. g. near *Amblyopinus*, for *E. philippianus* n. sp., Chili, FAUVEL, Rev. Ent. franc. xix.  
*Eurymnina plitvicensis*, Croatia, BERNHAUER, p. 39, Verh. Ges. Wien I, n. sp.  
*Geodromicus lestevoideus*, Palearctic, REITTER, p. 228, pl. ii, fig. 6, Wien. ent. Zeit. xix, n. sp.  
*Geostiba longicollis, confiera, thermarum*, p. 241, *rhunensis, furcifera*, p. 242, *brevicollis*, p. 243, France, FAUVEL, Rev. Ent. franc. xix, n. spp.  
*Heterothops baicalensis*, Siberia, FAUVEL, p. 233, t. c. n. sp.  
*Holotrochus helmsi, vagepunctus*, p. 187, *microphthalmus, anophthalmus*, p. 188, New Zealand, FAUVEL, t. c. n. spp.  
*Homalium azoricum*, Azores, p. 219, *cordicolle*, Russia, p. 220, *cribriceps*, Syria, *asturicum*, Asturias, p. 221, FAUVEL, t. c. n. spp.  
*Homalota vicina*, bituberculate ♂, KEYS, p. 134, Ent. Mag. xxxvi, and CHAMPION, t. c. p. 162.

- Hygrogeus* n. g. for *Geodromicus* subg. *Hygrogeus* Rey, GANGLBAUER, Käf. Mitteleur. ii, p. 710. [REY's subgen. was not indexed in Zool. Rec. 1880, this name is therefore new.]
- Hygrogeus penicillatus*, Buchara, REITTER, p. 49, Deutsche ent. Zeitschr. 1900, n. sp.
- Hygropora densa*, France, FAUVEL, p. 251, Rev. Ent. franc. xix, n. sp.
- Hypocyptus claviger*, Tuscany, FAUVEL, p. 235, t. c. n. sp.
- Indoscutellinus* subg. n., cf. *Xantholinus*.
- Lathrobium doderoi*, note on, FAUVEL, p. 282, Bull. Soc. ent. France 1900.
- L. (Glyptomerus) doderoi*, Genoa, ABEILLE, p. 204, t. c.; *L. sahlbergi*, Turkestan, FAUVEL, p. 227, Rev. Ent. franc. xix : n. spp.
- Leptacinus linearis* a valid species, characters, GERHARDT, pp. 72-74, Deutsche ent. Zeitschr. 1900 and p. 10, Zeitschr. Ent. Breslau xxv.
- Leptoglenus* subg. n., cf. *Leptolinus*.
- Leptolinus* (subg. n. *Leptoglenus*) *cæcus*, Samarcand, REITTER, p. 227, pl. ii, fig. 5, Wien. ent. Zeit. xix, n. sp.
- Leptotyphlus perpusillus*, Genoa, GESTRO, p. 573, Ann. Mus. Genova xl, n. sp.
- Leptus*; monograph of palaearctic, BERNHAUER, Verh. Ges. Wien I, pp. 399-432; *L. koronensis* and *abdominalis*, distinguished, BERNHAUER, p. 42, t. c.
- L. (Sipalia) heliæsi*, Digne, PEYERIMHOFF, p. 8, Bull. Soc. ent. France 1900; *L. major*, p. 416, *doderoi*, p. 418, Italy, *abeillei*, Spain, p. 423, BERNHAUER, Verh. Ges. Wien I; *L. tirolensis*, Austria, p. 43, *tenerima*, Reynosa, p. 44, *merkli*, Turkey, p. 45, BERNHAUER, t. c. : n. spp.
- L. secreta*, S.E. Europe, BERNHAUER, p. 201, t. c.; *L. sudetica*, Moravia, LOKAY, p. 77, Wien. ent. Zeit. xix; *L. merkli*, Asia Minor, BERNHAUER, p. 143, BODEMEYER (131) : n. spp.
- Leptusina* n. g. near *Ocyusa*, p. 198, for *L. bosnica* n. sp., Bosnia, p. 199, GANGLBAUER, Verh. Ges. Wien I.
- Lesteva bucharica*, Buchara, p. 222, *præses*, Corsica, p. 223, FAUVEL, Rev. Ent. franc. xix, n. spp.
- Medon lutrellus*, hypogeus, Syria, FAUVEL, p. 227, t. c.; *M. fulvus*, Congo, FAUVEL, p. 69, t. c. : n. spp.
- Micropeplus devillei*, Corsica, GANGLBAUER, p. 203, Verh. Ges. Wien I, n. sp.
- Mimocete* and *Doryloxenus*, distinctions queried, WASMANN, pp. 263-265, Zool. Jahrb. Syst. xiv.
- Mycetoporus oreophilus*, Siebenbürgen, BERNHAUER, p. 45, Verh. Ges. Wien I, n. sp.
- Myllena tenuicornis*, S. France, FAUVEL, p. 236, Rev. Ent. franc. xix, n. sp.
- Myrmecopora minima*, Greece, BERNHAUER, p. 538, Verh. Ges. Wien I, n. sp.
- Myrmedonia legionis*, Brazil, with *Eciton legionis*, WASMANN, p. 240, pl. xiii, fig. 6, Zool. Jahrb. Syst. xiv, n. sp.
- Myrmobiota* distinguished from *Homoëusa*, CASEY, p. 54, J. N. York Ent. Soc. viii.
- Niphetodes spaethi*, E. Europe, GANGLBAUER, p. 259, Verh. Ges. Wien I, n. sp.
- Ocalea reitteri*, Caucasus, BERNHAUER, p. 46, Wien. ent. Zeit. xix, n. sp.
- Ocyus rufipes* var. n. *obscuripes*, BERNHAUER, p. 145, BODEMEYER (131); *O. brachypterus* var. n. *aureotomentosus*, BERNHAUER, p. 46, Verh. Ges. Wien I.
- O. integer*, Smyrna, ABEILLE, p. 203, Bull. Soc. ent. France 1900; note on *O. integer*, FAUVEL, p. 282, t. c.; *O. ottomanus*, Constantinople, FAUVEL, p. 230, Rev. Ent. franc. xix : n. spp.
- Ocyusa grandis*, Alps, p. 250, *cartusiana*, Grande-Chartreuse, p. 251, FAUVEL, t. c.; *O. bicolor*, Asia Minor, BERNHAUER, p. 140, BODEMEYER (131) and p. 47, Wien. ent. Zeit. xix : n. spp.

- Oligota pilicornis*, Bordeaux, FAUVEL, p. 236, Rev. Ent. franc. xix, n. sp.  
*Ocyusida* n. g. near *Ocyusa*, p. 197, for *O. skalitzkyi* n. sp., Tyrol, p. 198, BERNHAUER, Verh. Ges. Wien I.  
*Omalium muensteri*, Norway, BERNHAUER, p. 540, t. c. n. sp.  
*Oreusa* subg. n. of *Leptusa* for *L. tirolensis* Bernh., etc., BERNHAUER, pp. 403 & 413, t. c.  
*Orocharis angustata*, habits, KRAUSS, p. 239, Wien. ent. Zeit. xix.  
*Othius punctulatus* Goeze = (*fulvipennis* Fab.), FAUVEL, p. 228, Rev. Ent. franc. xix.  
*O. turcmenus*, Turkestan, FAUVEL, p. 228, t. c. n. sp.  
*Oxyopoda peyerimhoffi*, Digne, BERNHAUER, p. 204, Verh. Ges. Wien I; *O. spaethi*, Austria, BERNHAUER, p. 532, t. c.; *O. rudis*, Valais, p. 252, *nimbicola*, Monte Rosa, p. 253, FAUVEL, Rev. Ent. franc. xix : n. spp.  
*Pæderus listeri*, Christmas Is., GAHAN, p. 89, Monogr. Christmas Island, n. sp.  
*Parisianopus* n. g. near *Isanopus*, p. 215, for *P. castaneipennis* n. sp., Buenos Aires, p. 216, BRÉTHES, Comun. Mus. Buenos Aires I.  
*Philonthus juvenilis* Peyr. = (*ganglbaueri* Bernh.), BERNHAUER, p. 46, Verh. Ges. Wien I; *P. cruentatus* var. n. *extinctus*, BERNHAUER, p. 145, BODEMEYER (131).  
*P. armeniacus*, Caucasus, BERNHAUER, p. 538, t. c.; *P. limbatus*, p. 230, Baikal, *alaiensis*, Turkestan, p. 231, *turcmenus*, Buchará, p. 232, FAUVEL, Rev. Ent. franc. xix : n. spp.  
*Phlaeocharis* (*Scotodytes*) *ichnusa*, Sardinia, DODERO, p. 404, Ann. Mus. Genova xl, n. sp.  
*Phleopora nitidiventris* (= *reptans* Rey), Algeria, FAUVEL, p. 61, Rev. Ent. franc. xix, n. sp.  
*Placusa depressa*, *complanata*, characters, synonymy, FAUVEL, p. 237, t. c.  
*P. nitida*, Corsica, FAUVEL, p. 238, t. c. n. sp.  
*Planestomus congoensis*, Africa, FAUVEL, p. 66, t. c. n. sp.  
*Platyprosopus ochraceus*, Congo, FAUVEL, p. 72, t. c. n. sp.  
*Platyathetus rugifrons*, Asia Minor, BERNHAUER, p. 145, BODEMEYER (131) and p. 55, Wien. ent. Zeit. xix, n. sp.  
*Protoskinea* n. g. near *Ocyusa*, for *P. paradoxa* n. sp., Switzerland, p. 200, BERNHAUER, Verh. Ges. Wien I.  
*Quedius umbrinus*, *inceps*, characters, FAUVEL, p. 233, Rev. Ent. franc. xix; *Q. ochropterus* var. n. *obscuripennis*, BERNHAUER, p. 538, Verh. Ges. Wien I; *Q. longicornis*, habits, FAUVEL, p. 66, Rev. Ent. franc. xix.  
*Q. quadriceps*, Syria, FAUVEL, p. 232, t. c.; *Q. microphthalmus*, Asia Minor, BERNHAUER, p. 144, BODEMEYER (131) and p. 53, Wien. ent. Zeit. xix : n. spp.  
*Scopæus schneideri*, Corsica, BERNHAUER, p. 202, Verh. Ges. Wien I; *S. parvicornis*, p. 69, *brachycerus*, p. 70, Congo, FAUVEL, Rev. Ent. franc. xix : n. spp.  
*Sharpia*, cf. *Toxoderus*.  
*Sipalia turcica*, Belgrade, BERNHAUER, p. 535, Verh. Ges. Wien I; *S. anatolica*, Broussa, FAUVEL, p. 245, Rev. Ent. franc. xix : n. spp.  
*Soliusa* n. g. p. 53 for *C. crinitula* n. sp., N. America, p. 54, CASEY, J. N. York Ent. Soc. viii.  
*Stenus erichsoni* var. n. *longelytratus*, BERNHAUER, p. 48, Verh. Ges. Wien I.  
*S. riechensteini*, Tyrol, p. 47, *transsylvanicus*, Transsylvania, p. 48, BERNHAUER, t. c. n. spp.  
*Stilicus korbi*, Lenkoran, *longicollis*, Persia, FAUVEL, p. 226, Rev. Ent. franc. xix, n. spp.  
*Senius ampliventris*, Buchará, REITTER, p. 228, pl. ii, fig. 4, Wien. ent. Zeit. xix, n. sp.



- Symploemon* n. g. *Aleocharini*, p. 258, for *S. anommatis* n. sp., Congo with *Anomma wilverthi*, p. 263, pl. xiv, fig. 18, WASMANN, Zool. Jahrb. Syst. xiv.
- Tachinus*; revision of European and Siberian, with tables of species, synonymy, and characters of sexes, LUZE, Verh. Ges. Wien I, pp. 475-508.
- Tachinus absconditus*, Mongolia, p. 475, *schneideri*, Caucasus, *furcatus*, Mongolia, p. 476, *gracilicornis*, Caucasus, p. 477, LUZE, t. c.; *T. sahlbergi*, Turkestan, FAUVEL, p. 234, Rev. Ent. franc. xix : n. spp.
- Tachyporus vaulogeri*, Algeria, FAUVEL, p. 59, t. c. n. sp.
- Teropalpus* Sol. (s. g. of *Trogophleus*) = (*Trogolinus* Sharp), FAUVEL, p. 182, t. c.
- Tetradonia goeldii*, Brazil, with *Eciton quadriglume*, WASMANN, p. 237, pl. xiii, fig. 5, Zool. Jahrb. Syst. xiv, n. sp.
- Thiasophila nitescens*, France, FAUVEL, p. 250, Rev. Ent. franc. xix, n. sp.
- Toxoderus* n. n. for *Sharpia* Fauv., FAUVEL, p. 189, t. c.
- Trogolinus* subg. n., cf. *Trogophleus* and *Trogophleus anglicanus* and *unicolor*, note, FAUVEL, p. 182, t. c.
- T. genalis*, p. 66, *congoensis*, *apicicornis*, p. 67, Congo, FAUVEL, t. c.; *T. (subg. n. Trogolinus) coloratus*, p. 231, *unicolor*, New Zealand, *anglicanus*, England, p. 232, *T. (Troginus) zealandicus*, N. Zealand, p. 233, SHARP, Ent. Mag. xxxvi : n. spp.
- Typhlocyptus pandellei*, description and figure, FAUVEL, pp. 190-192, Rev. Ent. franc. xix.
- Xantholinus tricolor* Fabr. = (*elegans* Oliv. nec Nordm. and *meridionalis* Lac.), FAUVEL, p. 162, t. c.
- X. inuus*, Algeria, FAUVEL, p. 58, t. c.; *X. scutellaris*, Turkey, p. 228, *tenuipunctus*, Talysch Mts., p. 229, FAUVEL, t. c.; *X. (Indoscutalinus) subg. n.) albicornis*, Celebes, HELLER, p. 5, Abh. Mus. Dresden ix, No. 5; *X. (Eulissus) badariottii*, Brazil, WASMANN, p. 282, Zool. Jahrb. Syst. xiv : n. spp.
- Xenoccephalus schmalzi*, p. 242, pl. xiv, fig. 12, *limulus*, p. 243, pl. xiii, fig. 7, *goeldii*, fig. 8, p. 244, Brazil, with *Eciton*, WASMANN, t. c. n. spp.

## PSELAPHIDÆ.

[Cf. DODERO (335), GANGLBAUER (131), KRAUSS (780), PIC (1012), RAFFRAY (1070, 1071), REITTER (1099).]

- Amaurops carinata*, ♂ characters, DODERO, p. 407, Ann. Mus. Genova xl.
- A. alpina*, Piedmont, DODERO, p. 406, t. c. n. sp.
- Anarmorys* n. g. near *Briara* and *Eupines*, p. 166, for *A. simplicifrons*, n. sp., Australia, p. 167, RAFFRAY, P. Linn. Soc. N. S. Wales xxv.
- Arthmius macrocephalus*, habits, WASMANN, p. 250, Zool. Jahrb. Syst. xiv.
- Articerus hamatipes*, p. 241, pl. x, fig. 40, *bipartitus*, p. 242, *cultripes*, p. 243, *curvicornis*, p. 244, W. Australia, RAFFRAY, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Batraxys lævigata*, *convergens*, Australia, RAFFRAY, p. 148, t. c. n. spp.
- Batrissodes mastersi*, Australia, RAFFRAY, p. 146, t. c. n. sp.
- Batrissus asperulus*, pl. x, fig. 26, p. 139, *leai*, *bimucronatus*, p. 142, *rugicornis*, p. 143, *falsus*, p. 144, Australia, RAFFRAY, t. c. n. spp.
- Briara frontalis*, Australia, RAFFRAY, pl. x, fig. 31, p. 163, n. sp.
- Bryaxius hirta* Macleay referred to *Batrissus*, RAFFRAY, p. 139, P. Linn. Soc. N. S. Wales xxv; *B. nasuta* etc. synonymy, REITTER, p. 11, Wien. ent. Zeit. xix; *B. pirazzolii*, ♀, KRAUSS, p. 292, Verh. Ges. Wien I.
- Bythinus dalmatinus* and *melinensis*, distinguished, Reitt., KRAUSS, p. 292, Verh. Ges. Wien I; *B. erichsoni*, variation, KRAUSS, p. 240, Wien.

- ent. Zeit. xix; *B. halbherrii* ♂, p. 412, *grouvellei* n. var. ? *alticola*, p. 414, DODERO, Ann. Mus. Genova xl; *B. diversicornis* var. *pallidior*, PIC, p. 403, Bull. Soc. ent. France 1900.
- B. tunisicus*, Tunis, PIC, p. 404, Bull. Soc. ent. France 1900; *B. (Trichobythus* subg. n.) *anophthalmus*, p. 408, *B. (Bythoxenus) vaccae*, p. 410 with var. *bensa*, p. 412, *alpestris*, p. 413, Italy, DODERO, Ann. Mus. Genova xl : n. spp.
- Centrophthalmus monilicornis*, India, RAFFRAY, p. 305, Bull. Soc. ent. France 1900, n. sp.
- Commotocerus bucharicus*, Transcaspian, REITTER, p. 50, Deutsche ent. Zeitschr. 1900, n. sp.
- Ctenisophus* n. g. p. 208, for Australian *Ctenistes*, with *C. morosus*, p. 209, *patruelis*, p. 210, *inaequalis*, p. 211, *laticollis*, p. 213, n. spp., Australia, RAFFRAY, P. Linn. Soc. N. S. Wales xxv.
- Ctenistes heterocerus*, Buchara, REITTER, p. 49, Deutsche ent. Zeitschr. 1900, n. sp.
- Curculionellus riparius*, N. S. Wales, RAFFRAY, p. 205, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Didimoprora armata*, *leana*, p. 223, *puncticollis*, p. 224, *dimidiata*, p. 225, Australia, RAFFRAY, t. c. n. spp.
- Eupines*, discussed and classified, p. 171, much synonymy of Schaufuss and others species, pp. 174–110, RAFFRAY, t. c.
- Eupines fuscicornis*, p. 174, *tuberosa*, p. 176, *bicolor*, *nodicornis*, p. 177, *pallipes*, p. 178, *bi clavata*, *nigriceps*, p. 179, *soror*, p. 180, *megacephala*, p. 181, *longicornis*, p. 182, *dubia*, *pectoralis*, p. 185, *liliputana*, p. 186, *triangulata*, p. 187, *nodosa*, *compressinoda*, *sternalis*, p. 188, *laevifrons*, p. 189, Australia, RAFFRAY, t. c. : n. spp.
- Eupinoda* n. g. near *Eupines*, for *E. leana*, pl. x, fig. 15, p. 168, *amplicollis*, p. 169, *diversicornis*, pl. x, fig. 10, p. 170, n. spp., Australia, RAFFRAY, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Eupinopsis punctata*, Australia, RAFFRAY, p. 192, t. c. n. sp.
- Gerallus* Sharp = (*Zosimus* Schauf.), RAFFRAY, p. 234, t. c.
- G. dimidiatus*, Swan River, id., p. 236, t. c. n. sp.
- Gnesion* n. g. *Bythinini*, p. 192, for *G. rufulum*, n. sp., Australia, p. 193, RAFFRAY, t. c.
- Hamotopsis* n. g. near *Hamotus*, for *H. australasiae*, n. sp., N. S. Wales, RAFFRAY, p. 217, t. c.
- Hamotulus dispar*, N. S. Wales, RAFFRAY, p. 218, t. c. n. sp.
- Leanymus* n. g. near *Didimoprora*, p. 219, for *L. palpalis*, n. sp., Australia, p. 220, pl. x, figg. 5, 6, RAFFRAY, t. c.
- Mesoplatus tuberculatus*, pl. x, fig. 32, *longicollis*, p. 134, *mastersi*, p. 135, *nitidus*, p. 136, Australia, RAFFRAY, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Paraplectus biplagiatus*, p. 132, pl. x, fig. 33, *infuscatus*, p. 133, Australia, RAFFRAY, t. c. n. spp.
- Pselaphophus unicolor*, N. S. Wales, RAFFRAY, p. 203, t. c. n. sp.
- Pselaphus leanus*, p. 198, *tuberculifrons*, p. 199, *elongatus*, *crassus*, p. 200, *pilosus*, p. 201, Australia, RAFFRAY, t. c. n. spp.
- Pselaptus* (by error as *Pselaphus*) *formicarius*, Colombia, RAFFRAY, pp. 305 & 460, Bull. Soc. ent. France 1900, n. sp.
- Reichenbachia (Brachygluta) hummieri*, Italy, p. 290, *fuchsi*, Dalmatia, p. 291, KRAUSS, Verh. Ges. Wien I; *R. surincauda*, Asia Minor, GANGLBAUER, p. 146, BODEMEYER (131) : n. spp.
- Rybaxis isidora* = (*harti* Black.), p. 151, *recta* ♂, p. 154, pl. x, fig. 42, p. 154, RAFFRAY, P. Linn. Soc. N. S. Wales xxv.
- R. marquardti*, Buchara, REITTER, p. 50, Deutsche ent. Zeitschr. 1900; *R. antilope*, p. 155, pl. x, fig. 43, *grandis*, p. 156, *adumbrata*, p. 158, *quinquefoveolata*, p. 159, RAFFRAY, t. c. : n. spp.

- Spilorrhombus* n. g. near *Didimoprora*, p. 225, for *S. hirtus*, n. sp., Swan River, p. 226, RAFFRAY, P. Linn. Soc. N. S. Wales xxv.  
*Tmesiphorus termitophilus*, Swan River, RAFFRAY, p. 215, t. c. n. sp.  
*Trichobythus* subg. n. cf. *Bythinus*.  
*Trimium zousali*, Ancona, KRAUSS, p. 289, Verh. Ges. Wien I; *T. minimum*, Piedmont, DODERO, p. 405, Ann. Mus. Genova xl : n. spp.  
*Tyraphus rugicollis*, Australia, RAFFRAY, p. 207, P. Linn. Soc. N. S. Wales xxv, n. sp.  
*Tyromorphus nigricornis*, p. 228, *cribratus*, p. 229, *dispar*, p. 231, *lævis*, p. 232, Australia, RAFFRAY, t. c. n. spp.

## PAUSSIDÆ.

[Cf. BEDEL (87), GESTRO (499).]

- Catalogue of *Paussidæ*; 270 species, GESTRO, pp. 811-850, Ann. Mus. Genova xl.  
*Arthropterus senegalensis*, Africa, GESTRO, p. 820, t. c. n. sp.  
*Ceratoderus oberthurii*, Bombay, GESTRO, p. 823, t. c. n. sp.  
*Paussus cornutus* and allies, synonymy, BEDEL, p. 279, Bull. Soc. ent. France 1900.  
*P. aldrovandii*, Cape of Good Hope, *spinolæ*, p. 824, *tigrinus*, p. 825, Abyssinia, GESTRO, Ann. Mus. Genova xl; *P. sahara* (= *cornutus* Fairm. nec Chevr.), BEDEL, p. 278, Bull. Soc. ent. France 1900 : n. spp.  
*Pleuropterus taprobanensis*, Ceylon, p. 821, *cardonii*, Bengal, p. 822, GESTRO, Ann. Mus. Genova xl, n. spp.

## SCYDMENIDÆ.

[Cf. CROISSANDEAU (296), FLEISCHER (424), GANGLBAUER (487), REITTER (1099, 1101).]

- Completion of CROISSANDEAU's (296) monograph of European *Scydmenidæ*.  
*Diarthroconnus* subg. n. cf. *Euconnus*.  
*Euconnus* (*Tetramelus*) *scipio*, Broussa, REITTER, p. 81, Deutsche ent. Zeitschr. 1900; *E. (Diarthroconnus* subg. n.) for *E. birnbacheri*, Austria, GANGLBAUER, p. 261, Verh. Ges. Wien I : n. spp.  
*Neuraphes* (*Pararaphes*) *puncticeps*, Vallombrosa, FLEISCHER, p. 232, Wien. ent. Zeit. xix; *N. (Pararaphes) deubeli*, Austria, GANGLBAUER, p. 260, Verh. Ges. Wien I : n. spp.  
*Scydmanus (Eumicrus) longipilis*, Buchara, REITTER, p. 50, Deutsche ent. Zeitschr. 1900, n. sp.

## SILPHIDÆ.

[Cf. DODERO (335), ESCALERA (380), FAIRMAIRE (389), GANGLBAUER (131), KRAUSS (780), REITTER (1094, 1095), XAMBEU (1420).]

- Agathidium sahlbergi*, Palestine, REITTER, p. 218, Wien. ent. Zeit. xix, n. sp.  
*Anemadus cribratostriatus*, Asia Minor, GANGLBAUER, p. 147, BODEMEYER (131), n. sp.  
*Attumbra judæa*, Bethlehem, REITTER, p. 217, t. c. n. sp.  
*Bathyscia*: habits; revision of Spanish, ESCALERA, An. Soc. Espan. xxviii, pp. 363-412; *B. sarteanensis* = (*delicata* Reitt.), *B. spagnoli* var. n. *brevipilis*, DODERO, p. 417, Ann. Mus. Genova xl.  
*B. subterranea*, Ancona, KRAUSS, p. 292, Verh. Ges. Wien I; *B. autumnalis*, p. 388, *bolivari*, p. 388, Spain. I



- Espan. xxxviii; *B. antrorum* with var. *brachycera*, p. 415, *solaris* p. 416, Italy, DODERO, Ann. Mus. Genova xl : n. spp.  
*Catops cholevoidea*, p. 217, *sahlbergi*, p. 218, Transcaspian, REITTER, Wien. ent. Zeit. xix, n. spp.  
*Chobautiella* n. g. *Anisotomides*, p. 229, for *C. anisotomoides* Fairm., pl. ii, fig. 9, REITTER, t. c.  
*Liodes anisotomoides*, see *Trachyscelis anisotomoides*, *Tenebrionidae*.  
*Necrophorus corsicus* varr. n. *vodozi*, *laportei*, MEIER, p. 218, Ent. Nachr. xxvi; *N. vestigator* var. n. *rauterbergi*, REITTER, p. 82, Deutsche ent. Zeitschr. 1900.  
*Silpha bicolor*, China, FAIRMAIRE, p. 616, Ann. Soc. ent. France lxxviii, n. sp.

## TRICHOPTERYGIDÆ.

- P. B. MASON (870) has published a supplement by the late A. MATTHEWS to his monograph of Trichopterygidae, including *Hydroscaphidae*.  
*Ptinella fauvelii*, New Zealand, MATTHEWS, p. 19, Trichopt. Suppl. n. sp.  
*Trichopteryx*; table of the species, MATTHEWS, t. c. pp. 38-46.  
*T. fuliginosa*, Mexico, MATTHEWS, p. 68, t. c. n. sp.

## SCAPHIDIDÆ.

- Baeocera pallida*, *abdominalis*, *discolor*, *rubriventris*, N. America, CASEY, p. 58, J. N. York Ent. Soc. viii, n. spp.  
*Cyparium ater*, Texas, CASEY, p. 56, t. c. n. sp.  
*Scaphidium ornatum*, *amplum*, N. America, CASEY, p. 56, t. c. n. spp.  
*Scaphimicrus* n. g., p. 58, for *Scaphisoma pusilla* Lec., and *S. dimidiatus*, *flavescens*, *lacustris*, *nugator*, p. 59, *exiguus*, p. 60, n. spp., N. America, CASEY, t. c.

## HISTERIDÆ.

- [Cf. BLACKBURN (125), FUENTE (475), LEWIS (29, 820, 821), MÜLLER (929), PEYERIMHOFF (996), REITTER (1101), THIÉRY (1318), WASMANN (1377).]  
*Acrilus nigricornis* and *seminulum* are sexes of *A. nigricornis*, MÜLLER, p. 301, Verh. Ges. Wien l.  
*Apobletes parallelus*, Sumatra, p. 268, *cavifrons*, Assam, *macilentus*, Sumatra, p. 269, *platessa*, Usambara, p. 270, LEWIS, Ann. Nat. Hist. vi, n. spp.  
*Chlamydopsis pygidialis*, Victoria, BLACKBURN, p. 206, P. Soc. Victoria xii, n. sp.  
*Epiechnus marseuli* (= *hispidus* Mars. nec Payk.), LEWIS, p. 290, Ann. Nat. Hist. vi, n. sp.  
*Epiurus festivus* referred to *Phelister*, LEWIS, p. 227, Ann. Nat. Hist. v.  
*E. foederatus*, Australia, LEWIS, p. 251, t. c. n. sp.  
*Epitoxus* n. g. near *Phelister*, for *E. corycaeus*, n. sp., Congo, LEWIS, op. cit. vi, p. 278.  
*Hister holubi*, p. 231, *sessilis*, p. 249, characters, LEWIS, op. cit. v; *H. sepulchralis* var. n. *impunctatus*, p. 138, characters of allies, p. 139, MÜLLER, Wien. ent. Zeit. xix.  
*H. montenegrinus*, Sarajevo, MÜLLER, p. 137, t. c.; *H. congoniis*, Africa, p. 230, *sinuosus*, Texas, p. 231, *gibberosus*, Mexico, p. 232, *meridanus*, Yucatan, p. 233, *lavimargo*, p. 246, *planimargo*, Costa Rica, *cinctipygus*, Siam, p. 247, *terramotus*, Java, p. 248, *pinnula*, Borneo,

- vacillans*, Tenasserim, p. 250, LEWIS, Ann. Nat. Hist. v; *H. mombasanus*, p. 279, *zambesius*, *angoniensis*, p. 280, Africa, *brahminius*, Ceylon, p. 281, *frontalis*, Assam, p. 282, LEWIS, op. cit. vi : n. spp.
- Hololepta dyak*, Borneo, p. 266, *syntexis*, W. Africa, p. 267, LEWIS, t. c.; *H. malleata*, Christmas Is., LEWIS, p. 90, Mon. Christmas Island : n. spp.
- Homalopygus remex*, Paraguay, LEWIS, p. 285, pl. x, fig. 10, Ann. Nat. Hist. vi, n. sp.
- Liopygus chalcis*, Perak etc., LEWIS, p. 270, t. c. n. sp.
- Notocoelis* n. g. p. 283, near *Discoceelis*, for *N. satur*, n. sp., Paraguay, p. 284, pl. x, fig. 9, LEWIS, Ann. Nat. Hist. vi.
- Omalodes sinuaticollis*, characters, LEWIS, p. 230, op. cit. v.
- O. felix*, p. 228, *striatipectus*, p. 229, S. America, LEWIS, t. c. n. spp.
- Pachycrærus chlorites*, W. Africa, LEWIS, p. 274, op. cit. vi, n. sp.
- Phelister illustris*, p. 226, *chapadei*, p. 227, Brazil, LEWIS, op. cit. v, n. spp.
- Placodes opacus*, Congo, LEWIS, p. 224, t. c. n. sp.
- Platylister mirabilis*, Khasia hills, LEWIS, p. 225, t. c.; *P. cathayi*, China, p. 271, *enodis*, New Guinea, p. 272, LEWIS, op. cit. vi : n. spp.
- Platysoma assamense*, Khasia hills, *disparile*, Lombok, LEWIS, p. 273, t. c.; *P. lignarium*, Christmas Is., LEWIS, p. 91, Mon. Christmas Island; *P. sulcisternum*, Australia, LEWIS, p. 226, Ann. Nat. Hist. v : n. spp.
- Probolosternus* n. g. near *Pachycrærus*, for *P. africanus*, p. 275, *permundus*, p. 276, pl. x, fig. 4, *minor*, p. 277, n. spp., W. Africa, LEWIS, op. cit. vi.
- Saprinus immundus* is a var. of *S. ceneus*, *S. pulcherrimus*, var. n. *similis*, MÜLLER, p. 141, Wien. ent. Zeit. xix; *S. castanipes* Curt. = (*fulvopterus* Mars., *bisignatus* Er. = (*matthewsi* Curt.), *connectens* Payk. = (*furcatus* Curt.), LEWIS, p. 238, Ann. Nat. Hist. vi.
- S. navasi*, Spain, FUENTE, p. 188, Act. Soc. Espan. 1900; *S. punctisternus*, China, p. 287, *lævus*, Ecuador, p. 288, LEWIS, Ann. Nat. Hist. vi; *S. amethystinus*, Queensland, LEWIS, p. 253, op. cit. v : n. spp.
- Sitalia* n. g. for *Paratropus severini* Lew., figured, p. 285, LEWIS, op. cit. vi.
- Spathocus coyei*, myrmecophilous habits, PIC, p. 171, Bull. Soc. ent. France 1900.
- Sternocelis ovalis*, Algeria, LEWIS, p. 252, Ann. Nat. Hist. v, n. sp.
- Stictostix parra*, figure, LEWIS, p. 283, op. cit. vi.
- Terapus muricatus*, Paraguay, LEWIS, p. 286, pl. x, fig. 12, t. c. n. sp.
- Teratosoma longipes*, habits and characters, WASMANN, pp. 250-254, pl. xiv, fig. 17, Zool. Jahrb. Syst. xiv.
- Teretrius acacie*, Tunis, REITTER, p. 83, Deutsche ent. Zeitschr. 1900; *T. braganza*, W. Africa, LEWIS, p. 289, Ann. Nat. Hist. vi : n. spp.
- Tribalus amnicola*, Mashonaland, LEWIS, p. 252, op. cit. v, n. sp.
- Xenonychus bidens*, Biskra, PEYERIMKOFF, p. 202, Bull. Soc. ent. France 1900; *X. chobauti*, Algeria, THÉRY, p. 32, t. c. : n. spp.

## NITIDULIDÆ and MONOTOMIDÆ.

[Cf. ARROW (36), GROUVELLE (540), REITTER (1096, 1099), SHARP (511).]

- Amartus appli*, Beirout, GANGLBAUER, p. 147, BODEMEYER (131), n. sp.
- Aneuropus* n. g. for *A. championi*, n. sp., Guatemala, SHARP, p. 573, pl. xviii, fig. 4, Biol. Centr. Amer. Col. ii, pt. i.
- Bactridium divinum*, p. 574, *brevicorne*, *crassum*, p. 575, *angustum*, *Aohri*, *rude*, pl. xviii, fig. 5, p. 576, *eumorphum*, fig. 6, *germanum*, p. 577, Centr. America, SHARP, t. c., n. spp.
- Carpophilus (Nitops) weyersi*, Sumatra, GROUVELLE - ' Belgique xlv, n. sp.

- Cybocephalus aurocupreus*, Transcaspian, REITTER, p. 219, Wien. ent. Zeit. xix, n. sp.
- Europs diffusus*, p. 567, *bilineatus*, *cognatus*, *illæsus*, p. 568, *obtusus*, *oxytelus*, pl. xviii, fig. 2, p. 569, *simplex*, *euplectoides*, *pumilio*, p. 570, *nannus*, *longulus*, fig. 3, p. 571, *convergens*, *luridipennis*, *discedens*, p. 572, Centr. America, SHARP, Biol. Centr. Amer. Col. ii, pt. i, n. spp.
- Hesperobænus stipes*, Guatemala, SHARP, p. 566, pl. xviii, fig. 1, t. c. n. sp.
- Heterhelus corpulentus*, Irkutsk, REITTER, p. 231, pl. ii, fig. 7, Wien. ent. Zeit. xix, n. sp.
- Meligethes explanatus*, Buchara, REITTER, p. 52, Deutsche ent. Zeitschr. 1900, n. sp.
- Monotoma centralis*, *munda*, p. 564, *pusilla*, p. 565, Centr. America, SHARP, Biol. Centr. Amer. Col. ii, pt. i, n. spp.
- Narcisa decidua* var. n. *nigricornis*, HELLER, p. 7, Abh. Mus. Dresden ix, No. 5.
- Phyconomus subtestaceus* Reitt. referred to *Hesperobænus*, SHARP, p. 565, Biol. Centr. Amer. Col. ii, pt. i.
- Stelidota orientalis*, Christmas Is., ARROW, p. 92, Mon. Christmas Island, n. sp.
- Tisiphone chontalenus*, pl. xviii, fig. 7, p. 578, *mexicanus*, *distans*, p. 579, Centr. America, SHARP, Biol. Centr. Amer. Col. ii, pt. i, n. spp.

## TROGOSITIDÆ or TEMNOCHILIDÆ.

- [Cf. ARROW (36), BEDEL (89), FAIRMAIRE (389, 395), LÉVEILLÉ (540, 818, 819).]
- Catalogue of the *Trogositidæ* of the world, 476 species, LÉVEILLÉ, pp. 1-26, Ann. Soc. ent. France lxix.
- LÉVEILLÉ gives longer descriptions of the species diagnosed by him last year, op. cit. lxviii, pp. 646-653.
- Acerops weyersi*, Sumatra, LÉVEILLÉ, p. 263, Ann. Soc. ent. Belgique xlv, n. sp.
- Airora decipiens*, Mexico, LÉVEILLÉ, p. 644, Ann. Soc. ent. France lxviii, n. sp.
- Alindria grandis* Serv. and *Trogosita cylindrica* Ol., note on, LÉVEILLÉ, p. 657, t. c.
- Gaurambe minor*, Madagascar, FAIRMAIRE, p. 135, Bull. Soc. ent. France 1900, n. sp.
- Leperina turbata* Pasc. = (*fasciculata* Reitt.), *L. lacera* Pasc. = (*signoreti* Reitt. nec Montr.), LÉVEILLÉ, p. 657, t. c.
- Marnia grouvellei*, Brazil, LÉVEILLÉ, p. 644, t. c. n. sp.
- Nemosoma elongatum* var. *tuniseum*, PIC, p. 61, Echange xvi.
- N. brasiliense*, Jatahy, LÉVEILLÉ, p. 644, Ann. Soc. ent. France lxviii, n. sp.
- Nemosomia picta* var. n. *bipunctata*, LÉVEILLÉ, p. 653, t. c.
- Oniscomorpha* n. g. near *Narcisa*, p. 93, for *O. marmorata*, n. sp., Christmas Is., p. 94, pl. x, fig. 2, ARROW, Mon. Christmas Island.
- Shoguna polita*, p. 92, *striata*, p. 93, Christmas Is., ARROW, t. c. n. spp.
- Temnochila gemella*, Algeria, BEDEL, p. 335, Bull. Soc. ent. France 1900; *T. polygonalis*, Brazil, LÉVEILLÉ, p. 654, Ann. Soc. ent. France lxviii: n. spp.
- Tenebroides fossulatus*, Bolivia, *brevis*, Brazil, LÉVEILLÉ, p. 645, t. c.; *T. delicatus*, p. 655, *subruber*, p. 656, Brazil, LÉVEILLÉ, t. c.: n. spp.
- Thymalus chinensis*, China, FAIRMAIRE, p. 616, t. c. n. sp.

## COLYDIIDÆ (incl. DISCOLOMIDÆ).

[Cf. ARROW (36), GROUVELLE (539, 540), SHARP (1212).]

*Discolomidæ*; this so-called family not valid, SHARP, p. 193, Rev. Ent. franc. xix.*Bothrideres strigatus*, Christmas Is., ARROW, p. 94, pl. x, fig. 3, Mon. Christmas Island, n. sp.*Hyberis simplex*, Sumatra, GROUVELLE, p. 265, Ann. Soc. ent. Belgique xliv, n. sp.*Lascotonus frater*, Sumatra, GROUVELLE, p. 265, t. c. n. sp.*Pseudosoytus* n. g. between *Colydiini* and *Deretaphrini*, for *P. colydioides* n. sp. Congo, GROUVELLE, p. 424, t. c.

## CUCUJIDÆ.

*Silvanus consors*, pl. xvii, fig. 26, p. 561, *perforatus*, fig. 27, p. 562, Centr. America, SHARP, Biol. Centr.-Amer. Col. ii, pt. i, n. spp.*Tristaria africana*, Congo, GROUVELLE, p. 424, Ann. Soc. ent. Belgique xlv, n. sp.

## CRYPTOPHAGIDÆ.

[Cf. CASEY (229), GROUVELLE (540), SHARP (511).]

*Agathengis subnitens*, p. 109, *carinula*, *pumilio*, *patens*, *crassula*, p. 110, *capitata*, *quadricollis*, *constricta*, *tenebrosa*, p. 111, *coloradensis*, *stricticollis*, *lucida*, *luculentia*, p. 112, *forticornis*, *macer*, *ochronitens*, *undulata*, p. 113, *melas*, *soror*, *cribripennis*, p. 114, *dispersa*, *puella*, *castanea*, p. 115, *parvicollis*, *subrecta*, p. 116, *nigricollis*, *longipennis*, *subdentata*, p. 117, N. America, CASEY, J. N. York Ent. Soc. viii, n. spp.*Anchorius* n. g. *Biphyllini*, p. 79, for *A. lineatus*, n. sp., Arizona, p. 80, CASEY, t. c.*Anepsicus* n. g. for *A. brunneus* n. sp., Mexico, pl. xviii, fig. 19, SHARP, p. 600, Biol. Centr.-Amer. Col. ii, pt. i.*Antherophagus pallidivestis*, Utah, CASEY, p. 89, J. N. York Ent. Soc. viii, n. sp.*Atomaria nubipennis*, *postpallens*, p. 119, *distincta*, *divisa*, *gilvipennis*, p. 120, *saginata*, p. 121, *curtula*, *gonodera*, *riparia*, *subulutacea*, p. 122, *incerta*, *brevicollis*, *aleutica*, p. 123, *oblongula*, *crypta*, *fallax*, p. 124, *ovalis*, *inepta*, *nanula*, p. 125, N. America, CASEY, J. N. York Ent. Soc. viii, n. spp.*Cenoscelis optata*, Guatemala, SHARP, p. 603, Biol. Centr.-Amer. Col. ii, pt. i; *C. ochreosa*, *parallela*, *angusticollis*, p. 106, *shastanica*, *macilentia*, *basalis*, p. 106, *ovipennis*, *macra*, *elongata*, *obscura*, *subfuscata*, p. 107, N. America, CASEY, J. N. York Ent. Soc. vi : n. spp.*Cisocryptus* n. g. for *C. insolitus* n. sp., Mexico, pl. xviii, fig. 20, SHARP, p. 601, Biol. Centr.-Amer. Col. ii, pt. i.*Caelocryptus* n. g. p. 593, for *C. mexicanus*, *cognatus*, *pallens*, p. 594, *discedens*, pl. xviii, fig. 14, p. 595, n. spp., Centr. America, SHARP, t. c.*Crosimus* n. g. near *Cryptophagus*, p. 89, for *C. obscurus*, *hirtus*, n. spp., N. America, p. 90, CASEY, J. N. York Ent. Soc. viii.*Cryptophagus confertus*, *nodifer*, *parvinoda*, p. 94, *infuscatus*, *plectrum*, *ciatricornis*, *politus*, *difficilis*, p. 95, *plenus*, *amputatus*, *laticlavus*, p. 96, *inscitus*, *cribricollis*, *brevipilis*, *lepidus*, p. 97, *depressulus*, *rectus*, *antennatus*, *valens*, p. 98, *histrionicus*, *discedens*, *hebes*, *lyraticollis*, *otiosus*, p. 100, N. Am.



- Curelius* n. g. for *Ephistemus dilutus* Reitt., *exiguus* Er., CASEY, p. 127, t. c.
- Diphyllus micros*, Sumatra, GROUVELLE, p. 266, Ann. Soc. ent. Belgique xlv, n. sp.
- Diplocelus bicolor*, p. 621, *parvus*, pl. xviii, fig. 24, p. 622, Centr. America, SHARP, Biol. Centr.-Amer. Col. ii, pt. i, n. spp.
- Empocryptus* n. g. for *E. ovalis*, pl. xviii, fig. 13, n. sp., Guatemala, SHARP, t. c.
- Ephistemus reitteri*, CAUCASUS, CASEY, p. 128, J. N. York Ent. Soc. viii; *E. distans*, Guatemala, SHARP, p. 603, Biol. Centr.-Amer. Col. ii, pt. i : n. spp.
- Euderopus* n. g. *Biphyllinae*, for *E. brevipes*, p. 622, *perbrevis*, *microps*, *unicolor*, p. 623, *iteratus*, *regularis*, *setosus*, p. 624, n. spp., Centr. America, SHARP, Biol. Centr.-Amer. Col. ii, pt. i.
- Gonicocelus* n. g. *Biphyllinae*, p. 604, for *G. unicornis*, pl. xviii, fig. 22, *tricornis*, p. 605, *relictus*, *rudis*, *germanus*, p. 606, *brevicollis*, *mexicanus*, p. 607, *celatus*, *hirtus*, p. 608, *cultratus*, *longicornis*, p. 609, *mediocris*, *parnoides*, pl. xviii, fig. 23, p. 610, *latus*, *guatemalensis*, *vestitus*, p. 611, *securiger*, *hystrix*, p. 612, *championi*, *throscoides*, *subtilis*, p. 613, *choutalensis*, *planus*, p. 614, *crispatus*, *angustus*, p. 615, *bimargo*, *spheniscus*, *humilis*, p. 616, *laticollis*, *arduus*, p. 617, *muticus*, *concolor*, *segni*, p. 618, *monticola*, *oopsis*, p. 619, *sellatus*, *deplanatus*, p. 620, *mollis*, p. 621, Centr. America, n. spp., SHARP, t. c.
- Henoticus monticola*, *compactus*, p. 597, *loberinus*, pl. xviii, fig. 16, p. 598, Centr. America, SHARP, t. c. n. spp.
- Holosternus* n. g., p. 599, for *H. distans* n. sp., Guatemala, pl. xviii, fig. 18, p. 600, SHARP, t. c.
- Loberus chiriguensis*, *guatemalensis*, *sellatus*, p. 582, *cryptophagus*, *pallidus*, *suturalis*, p. 583, *brevicollis*, pl. xviii, fig. 9, *longulus*, *lateralis*, p. 584, *marginalis*, p. 585, Centr. America, SHARP, t. c.; *L. subglaber*, New Jersey, *imbellis*, Florida, *insularis*, Cuba, Bahamas, *puberulus*, Mexico, CASEY, p. 83, J. N. York Ent. Soc. viii : n. spp.
- Othniocryptus* n. g., p. 598, for *O. variegatus* n. sp., Panama, pl. xviii, fig. 17, p. 599, SHARP, Biol. Centr.-Amer. Col. ii, pt. i.
- Platoberus* n. g. for *P. latus*, pl. xviii, fig. 10, *rotundus*, p. 586, *robustus*, *divicus*, p. 587, n. spp., Central America, SHARP, t. c.
- Pseudhenoticus* n. g. for *P. parallelus* n. sp. pl. xviii, fig. 15, Guatemala, SHARP, p. 596, t. c.
- Pteryngium malacum*, N. America, CASEY, p. 102, J. N. York Ent. Soc. viii, n. sp.
- Salebius* n. g. near *Cryptophagus*, for *S. 6-dentatus*, p. 90, *minax*, *hictor*, *montanus*, *tarsalis*, p. 91, n. spp., N. America, CASEY, t. c.
- Telmatoscus* n. g. near *Loberus*, for *T. clariger* n. sp.; Mexico, pl. xviii, fig. 8, p. 581, SHARP, Biol. Centr.-Amer. Col. ii, pt. i.
- Tisactia* n. g. near *Atomaria*, for *T. subglabra*, n. sp., Indiana, CASEY, p. 126, J. N. York Ent. Soc. viii.
- Tomarus obsoletus*, Arizona, CASEY, p. 85, t. c.; *T. niger*, p. 587, *debilis*, pl. xviii, fig. 11, *pubescens*, *lateralis*, p. 588, *pictipennis*, *atomarius*, p. 589, *picticornis*, *discoideus*, *confertus*, p. 590, *latipennis*, *abjectus*, p. 591, *heterocerus*, fig. 12, *lentus*, p. 592, Centr. America, SHARP, Biol. Centr.-Amer. Col. ii, pt. i : n. spp.
- Trogocryptus* n. g. for *T. nigripes* n. sp., Guatemala, pl. xviii, fig. 21, SHARP, p. 602, t. c.

## LATHRIDIIDÆ.

Recent classifications discussed and compared, the genera annotated, the supplementary species catalogued with synonymy, BELON (92A).

Descriptions of S. African *Lathridiidae*, BELON (93).

*Anommatus*; characters of species, REITTER, p. 12, Wien. ent. Zeit. xix;

*A. distinctus* Dod. (below) referred to *Abromus*, REITTER, p. 242, t. c.

*A. plicatus* var. n. *dictyoderus*, DODERO, p. 419, Ann. Mus. Genova xl.

*A. distinctus*, San Remo, with var. *devillei*, Alpes maritimes, DODERO, p. 418, t. c. n. sp.

### MYCETOPHAGIDÆ.

[Cf. CASEY (229), GROUVELLE (540), XAMBEU (1420).]

*Alitargus* subg. n. See *Litargus*.

*Berginus*: not *Mycetophagid*, to be placed near *Lyctus*, CASEY, p. 129, J. N. York Ent. Soc. viii.

*B. bahamicus*, Eleuthera, id. l. c. n. sp.

*Gratusus* subg. n., cf. *Tritoma*.

*Ilendus* subg. n., cf. *Tritoma*.

*Litargellus* subg. n., see *Litargus*.

*Litargus*; N. American tabulated with *Tilargus* subg. n. for *L. 4-spilotus*, *Paralitargus* subg. n. for *L. didemus*, *Alitargus* subg. n. for *L. balteatus* Lec., *Litargellus* subg. n. for *L. nebulosus* Lec., CASEY, pp. 135, 136, J. N. York Ent. Soc. viii.

*L. weyersi*, *latus*, Sumatra, GROUVELLE, p. 267, Ann. Soc. ent. Belgique xlv; *L. (Paralitargus) asperulus*, Dakota, CASEY, p. 136, J. N. York Ent. Soc. viii: n. spp.

*Paralitargus* subg. n., see *Litargus*.

*Parilendus* subg. n., cf. *Tritoma*.

*Thrimolus* n. g. ? near *Typhaea*, for *T. minutus* n. sp., Texas, CASEY, p. 137, J. N. York Ent. Soc. viii.

*Tilargus* subg. n., see *Litargus*.

*Tritoma*; N. American species tabulated, with following new subgenera, *Ilendus* for *T. melsheimeri* and allies, *Parilendus* for *T. bipustulata* etc., *Gratusus* for *T. pluriguttatus* etc., CASEY, pp. 131-134, J. N. York Ent. Soc. viii.

*Tritoma serrulata*, *picta*, *subdepressa*, p. 132, *T. (Gratusus) notatula*, p. 134, N. America, CASEY, l. c. n. spp.

### DERMESTIDÆ.

[Cf. CASEY (229), GANGLBAUER (131), PIC (1024), REITTER (1094).]

Study of N. American *Dermestidae*, CASEY, J. N. York Ent. Soc. viii.

*Anthrenus*; larval habits, POJUJADE, p. 169, Bull. Soc. ent. France 1900;

*Anthrenus*; see also *Nathrenus*.

*A. occidentis*, p. 160, *parvus*, p. 161, *rotundulus*, p. 162, N. America, CASEY, J. N. York Ent. Soc. viii, n. spp.

*Attagenus extricatus*, *deficiens*, p. 146, *elongatulus*, p. 147, N. America, CASEY, J. N. York Ent. Soc. viii, n. spp.

*Cryptorhopalum filitarse*, *reversum*, *pruddeni*, *festivum*, p. 156, *dorcato-moides*, *oberulum*, *granum*, *anthrax*, *affine*, p. 157, *modestum*, *fusciclave*, *pumilum*, p. 158, N. America, CASEY, t. c. n. spp.

*Dermestes undulatus*, early stages, XAMBEU, p. 143, Naturaliste xxii.

*D. medialis*, California, p. 141, *angustus*, Texas, p. 143, CASEY, J. N. York Ent. Soc. viii: n. spp.

*Globicornis marginata*, habits, FORMANEK, p. 78, Wien. ent. Zeit. xix.

*G. (Hadrotoma) vaulogeri*, Tunis, PIC, p. 53, Echange xvi, n. sp.

*Hadrotoma (Pseudomesalia* subg. n.) *bodemeyeri*, ASIA MINOR, GANGLBAUER, p. 148, BODEMEYER (131), n. sp.

*Nathrenus* subg. n. of *Anthrenus* for *A. verbasci* L., CASEY, p. 161, J. N. York Ent. Soc. viii.

*Novelsis* n. g. (with subg. n. *Paranovelsis* for *Attagenus varicolor* Jayne) for part of *Attagenus*, with *N. byturoides*, *utana*, p. 148, *picta*, p. 149, n. spp., N. America, CASEY, t. c.

*Orphilus chalybeus*, Idaho, CASEY, p. 164, t. c. n. sp.

*Paranovelsis* subg. n., see *Novelsis*.

*Perimegatoma jaynei*, *guadelupensis*, *ampla*, *nevadica*, *impressa*, p. 150, *monticola*, p. 151, N. America, CASEY, J. N. York Ent. Soc. viii, n. spp.

*Trogoderma dichroa*, Turkestan, REITTER, p. 219, Wien. ent. Zeit. xix; *T. serriger*, *pollens*, *complex*, *variipes*, *simulans*, p. 153, *virginica*, *oblongula*, *aspericollis*, *brevis*, *obsolescens*, *advena*, p. 154, N. America, CASEY, J. N. York Ent. Soc. viii, n. spp.

*Pseudomesalia* subg. n., cf. *Hadrotoma*.

### BYRRHIDÆ.

Larva of *Byrrhus fasciatus*, KINCAID, p. 372, pl. xxiv, P. Washington Ac. ii.

*Porcinolus murinus*, varieties, FLEISCHER, p. 179, Wien. ent. Zeit. xix.

*Simplocaria brevistriata*, Spain, REITTER, p. 83, Deutsche ent. Zeitschr. 1900, n. sp.

### PARNIDÆ.

[Cf. ABEILLE & GROUVELLE (4), GROUVELLE (539, 540), WATERHOUSE (1383).]

*Esolus galloprovincialis*, France, ABEILLE, p. 137, Bull. Soc. ent. France 1900, n. sp.

*Normandia* n. g. for *Limnius villosocostatus* Reiche, PIC, p. 266, Bull. Soc. ent. France 1900.

*Parygrus whiteheadi*, Hainan Is., WATERHOUSE, p. 310, Ann. Nat. Hist. v, n. sp.

*Riolus meridionalis*, Montpellier, GROUVELLE, p. 137, Bull. Soc. ent. France 1900, n. sp.

*Stenelmis clavareauxi*, Congo, GROUVELLE, p. 425, Ann. Soc. ent. Belgique xlv; *S. weyersi*, Sumatra, GROUVELLE, p. 268, op. cit. xlv : n. spp.

### HETEROCERIDÆ.

[Cf. GAHAN (478), REITTER (1095), SAHLBERG (1143).]

*Heterocerus* (*Micromichilus* subg. n.) *minutissimus*, Amu Daria, p. 205, *H. niloticus*, Cairo, p. 206, *ahngeri*, Transcaspian, p. 207, SAHLBERG, Ofv. Finska Forh. xlii; *H. kulabensis*, Bucharra, REITTER, p. 227, pl. ii, fig. 2, Wien. ent. Zeit. xix : n. spp.

*Micromichilus* subg. n., cf. *Heterocerus*.

### LUCANIDÆ.

[Cf. BORDAS (144), GAHAN (29), HELLER (573), JAKOWLEFF (649, 650), PLANET (1039, 1040), SHARP (1208).]

Larvæ of *Pholidotus*, *Sclerostomus* etc., OHAUS, p. 223 etc., Ent. Zeit. Stettin lxi.

- Ægus specularis*, Cochin China, p. 633, *hamatus*, Borneo, p. 635, *planeti*, New Guinea, p. 637, JAKOWLEFF, Horæ Soc. ent. Ross. xxxiv; *Æ. sculpticollis*, p. 8, pl. fig. 9, *punctithorax*, p. 9, fig. 8, Celebes, HELLER, Abh. Mus. Dresden ix, No. 5 : n. spp.
- Auzicerus æthiops*, Bolivia, JAKOWLEFF, p. 38, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Eurytrachelus intermedius*, mandibular developments, SHARP in Willey's Results iv, p. 382, pl. xxxv, figg. 3a-d.
- Figulus rossi*, Christmas Is., GAHAN, p. 96, Mon. Christmas Island, n. sp.
- Hemisodoriscus semenowi*, Setschuen, JAKOWLEFF, p. 36, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Leptinopterus elegans*, Brazil, JAKOWLEFF, p. 632, t. c. n. sp.
- Lucanus* and *Pseudolucanus*; monograph continued, PLANET, Naturaliste xxii, pp. 46 etc.; *L. cervus*, note on habits, PIC, p. 108, Bull. Soc. ent. France 1900.
- L. singularis* ♀, E. India †, PLANET, Naturaliste xxii, p. 11, n. sp.
- Nigidius taurus*, Philippines, JAKOWLEFF, p. 640, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Parægus listeri*, pl. xi, figg. 1, 2, p. 96, GAHAN, Mon. Christmas Island, n. sp.
- Pseudægus* n. g., p. 7, for *P. leptodon* n. sp., Celebes, p. 8, pl. fig. 10, HELLER, Abh. Mus. Dresden ix, No. 5.
- Pseudolucanus mnizechi*, E. India, PLANET, p. 96, Naturaliste xxii, n. sp.

## PASSALIDÆ.

- [Cf. BLACKBURN (125), GAHAN (478), HELLER (573), OHAUS (956).]
- Stridulatory organs : Larvæ of *Passalidæ*, habits, relations to parents etc., OHAUS (956, pp. 164 etc.)
- Gnaphalocnemis* n. n. for *Eriocnemis* Kaup., HELLER, p. 10, Abh. Mus. Dresden ix, No. 5.
- Mastochilus*: the Australian species, BLACKBURN, pp. 207-209, P. Soc. Victoria xii.
- M. capitalis*, N. S. Wales, id. p. 209, t. c. n. sp.
- Plesthenus mandibularis*, Celebes, HELLER, p. 11, pl. fig. 5, Abh. Mus. Dresden ix, No. 5, n. sp.

## SCARABÆIDÆ.

- [The following memoirs relate to *Scarabæidæ*, viz. :—ARROW (35, 36), BLACKBURN (123, 124, 125), BORDAS (144), BRAUNS (171), BRENSKE (177 to 182, 131, 574), CHAMPENOIS (234), CLOUËT DES PESRUCHES (260 to 262), FAIRMAIRE (389, 391), GAHAN (478), GESTRO (494), HELLER (573), KOLBE (747, 748, 751), KRAATZ (772), OHAUS (954-956), OLSOUFIEW (962), D'ORBIGNY (963), PIC (1036), RABES (1067), REITTER (1092, 1099, 1101), SEMENOW (1193, 1194), SHARP (1208), TARNANI (1305), XAMBEU (1420); see also *Cetoniini*, p. 144.]
- Larvæ and larval habits of various Lamellicorns, specially of *Rutelidæ*, OHAUS (956).
- Stridulating organs, GAHAN (478).

*Copriini*.

- Aphodius moscoviticus*, Russia, SEMENOW, p. 91, Horæ Soc. ent. Ross. xxxiv; *A. (Orodaliscus* subg. n.) *rotundangulus*, Russia, REITTER, p. 84, Deutsche ent. Zeitschr. 1900; *A. (Bodilus) holdereri*, p. 155.



- A. (Plagiogonus) culminarius*, p. 156, *A. (Agrilinus) virginalis*, *A. (Volinus) bistriga*, p. 157, *forsteri*, p. 158, pl. 1, fig. 2, Chinese centr. Asia, REITTER, Wien. ent. Zeit. xix : n. spp.
- Cephalodesmus minor*, N. S. Wales, BLACKBURN, p. 36, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Cheironitis socotranus*, Sokotra, GAHAN, p. 10, Bull. Liverp. Mus. iii, n. sp.
- Corythoderus marshalli*, S. Africa, BRAUNS, p. 164, pl. ix, Ann. Hofmus. Wien xv, n. sp.
- Epilissus*; habits, CLOUËT, p. 123, Bull. Soc. ent. France 1900.
- Gymnopleurus laevis*, Somaliland, ARROW, p. 23, P. Zool. Soc. London 1900, n. sp.
- Labroma horrens*, characters, BLACKBURN, p. 37, Tr. R. Soc. S. Austral. xxiv.
- Lethrus dinotherium litvinovi*, subsp. n., SEMENOW, p. 308, Horæ Soc. ent. Ross. xxxiv; *L. apterus*, habits etc., TARNANI (1305); *L. apterus*, notes on, TARNANI, p. 49, Illustr. Zeitschr. Ent. v.
- Ochodorus inscutellaris*, Palestine, PIC, Frelon viii, sep. pag. p. 6; *O. euzinus*, Tauria, SEMENOW, p. 93, Horæ Soc. ent. Ross. xxxiv : n. spp.
- Odontoderus* n. g. for *Atenius spinicollis* Har. and *O. gestroi*, p. 249, oberthuri, p. 250, n. spp., W. Africa, CLOUËT, Ann. Soc. ent. Belgique xlv.
- Onthophagides*: D'ORBIGNY publishes a supplement to his palaearctic synopsis, with numerous remarks on localities & synonymy, Abeille xxix, pp. 289-300.
- Onthophagus orcas*=(*felschei* Reitt.), p. 273, *tricuspis* and *lemuroides* distinguished, p. 274, OLSOUFLEW, Annuaire Mus. St. Petersb. v.
- O. tricuspis*, Caucasus, SEMENOW, p. 94, Horæ Soc. ent. Ross. xxxiv; *O. pentaceros*, p. 266, *d'orbignyi*, p. 268, Persia, *hypertropis*, Marghelan, p. 269, *persianus*, Persia, p. 270, [cf. also *Tauronthophagus*], OLSOUFLEW, Annuaire Mus. St. Petersb. v : n. spp.
- Orodaliacus* subg. n. cf. *Aphodius*.
- Panelus arthuri*, Australia, BLACKBURN, p. 211, P. Soc. Victoria xii, n. sp.
- Platyphymatia squalidus* ♀, BLACKBURN, p. 38, Tr. R. Soc. S. Austral. xxiv.
- Psammobius gestroi*, Burma, CLOUËT, p. 13, Ann. Soc. ent. Belgique xlv, n. sp.
- Rhysemorphus* n. g. near *Rhyssenus*, for *R. mocquerysi* n. sp., Madagascar, FAIRMAIRE, p. 122, Bull. Soc. ent. France 1900, n. sp.
- Sicardius psammodiiformis*, redescribed, CLOUËT, p. 14, Ann. Soc. ent. Belgique xlv.
- Tauronthophagus kachowskyi*, Somaliland, OLSOUFLEW, Annuaire Mus. St. Petersb. v, n. sp.
- Trox expansus*, Somaliland, ARROW, p. 22, pl. 1, fig. 16, P. Zool. Soc. London 1900, n. sp.

### *Glaphyrini.*

- Amphicoma vulpes*, var. n. *mixta*, BRANCSIK, p. 99, Jahresh. Ver. Trencsen. xxi.
- A. (Eulasia) speciosa*, Syria, Persia, CHAMPENOIS, p. 248, Bull. Soc. ent. France 1900; *A. belia*, Buchara, REITTER, p. 53, Deutsche ent. Zeitschr. 1900 : n. spp.
- Arrhaphora*; is the ♀ of *Toxocerus*, FAIRMAIRE, p. 618, Ann. Soc. ent. France lxxiii.

*Toxocerus latouchei*, China, FAIRMAIRE, p. 617, Ann. Soc. ent. France lxxiii, n. sp.

### *Melolonthini.*

BRENSKE (177) continues his monograph of *Serica*.

The African genera of *Sericides*, tabulation, with new genera and division into two tribes, *Sericinæ*, *Trochalinae*, BRENSKE, Berlin. ent. Zeitschr. xlv, pp. 71-82.

The *Melolonthidæ* of Ceylon, BRENSKE (178).

*Anacheirotus* n. g. *Sericoidarum*, p. 39, for *A. inornatus*, n. sp., S. Australia, p. 40, BLACKBURN, Tr. R. Soc. S. Austral. xxiv.

*Apogonia rauca* var. n. *unistriata*, *A. comosa* var. n. *ludificans*, BRENSKE, p. 348, Ent. Zeit. Stettin lxi ; *A. destructor*, natural history, ZEHNTEBER (1426).

*A. nodosa*, with var. *geniculata*, Sumatra, BRENSKE, p. 146, Mem. Soc. ent. Belgique vii, n. sp.

*Autoserica stupida*, Madagascar, BRENSKE, p. 52, Berlin. ent. Zeitschr. 1900 ; *A. prabangana*, *eluctabilis*, p. 414, *eclogaria*, *atavana*, p. 415, Cambodia, BRENSKE, Bull. Mus. Paris 1899 ; *A. weligamana*, Ceylon, BRENSKE, p. 346, Ent. Zeit. Stettin lxi : n. spp.

*A. weyersi*, Sumatra, BRENSKE, p. 142, Mem. Soc. ent. Belgique vii : n. spp.

*Brahmina brenskei*, Nanschan, REITTER, p. 158, Wien. ent. Zeitschr. xix, n. sp.

*Charioserica* n. g. for *C. striata*, n. sp., Madagascar, BRENSKE, p. 47, Berlin. ent. Zeitschr. xlv.

*Comaserica hildebrandti*, *bergrothi*, p. 39, *mocquersyi*, p. 41, *discolor*, p. 42, *aurita*, p. 43, *foveicollis*, p. 44, Madagascar, BRENSKE, t. c. n. spp.

*Cyphoserica* n. g. for *C. mukengeana*, n. sp. Africa, BRENSKE, p. 85, t. c.

*Delphinobius* n. g. near *Hoplia* for *D. cottæ* n. sp. Madagascar, FAIRMAIRE, p. 241, Ann. Soc. ent. Belgique xlv.

*Edinopia lateraturata*, *guttaticollis*, China, FAIRMAIRE, p. 620, Ann. Soc. ent. France lxxviii, n. spp.

*Eriphoserica* n. g. p. 62, for *E. camentoides*, n. sp. Madagascar, p. 63, BRENSKE, Berlin. ent. Zeitschr. xlv.

*Euphorenia* n. g. *Sericinæ*, p. 86, with *E. butneri*, p. 88, *pygialis*, p. 89, *benitoensis*, p. 90, *multipunctata*, p. 91, *metasternalis*, p. 92, *semlionis*, p. 93, *kossowana*, *candzei*, p. 96, Africa, n. spp., BRENSKE, t. c.

*Glaphyserica* n. g. p. 52, for *G. humeralis*, n. sp. Madagascar, p. 53, BRENSKE, t. c.

*Glycyserica* n. g. p. 48, for *G. depravata*, n. sp. Madagascar, p. 49, BRENSKE, t. c.

*Heteronyx unicus*, S. Australia, BLACKBURN, p. 38, Tr. R. Soc. S. Austral. xxiv ; *H. grandis*, Victoria, BLACKBURN, p. 113, t. c. : n. spp.

*Heteroserica* n. g. for *H. paradoxa*, n. sp. Madagascar, BRENSKE, p. 64, Berlin. ent. Zeitschr. 1900.

*Holotrichia moffartsi*, p. 148, *weyersi*, *deliana*, p. 149, Sumatra, BRENSKE, Mem. Soc. ent. Belgique vii ; *H. pretiosa*, Amboina, BRENSKE, p. 624, Semon Forschungsreise, v : n. spp.

*Hoplia amena*, Sumatra, BRENSKE, p. 142, Mem. Soc. ent. Belgique vii, n. sp.

*Hoplosternus*, species grouped, BRENSKE, p. 154, t. c.

*H. weyersi*, Sumatra, id. p. 152, t. c. n. sp.

*Lachnosterna patens*, p. 175, *latens*, p. 176, St. Vincent, *trinitatis*, Trinidad, p. 182, ARROW, Tr. ent. Soc. London 1900, n. spp.

*Lasiopsis koltzei*, Turkestan, REITTER, p. 52, Deutsche ent. Zeitschr. 1900, n. sp.

- Lepidiota oblonga*, Thursday Island, p. 622, *semonis*, *maculata*, New Guinea, *crinita*, Queensland, p. 623, BRENSKE, *Semon Forschungsreisen v*, n. spp.
- Leucopholis horni*, Ceylon, BRENSKE, p. 355, Ent. Zeit. Stettin lxi, n. sp.
- Listronyx antarcticus*, p. 109, *hirsutus*, p. 110, Patagonia, BRENSKE, Ann. Soc. ent. Belgique xlv, n. spp.
- Melolontha vulgaris* var. n. *asiatica*, BRENSKE, p. 151, BODEMEYER (131).
- Microtrichia* n. g. p. 345, for *M. puttalama*, n. sp. Ceylon, p. 360, BRENSKE, Ent. Zeit. Stettin lxi.
- Neoserica moffartsi*, Sumatra, BRENSKE, p. 143, Mem. Soc. ent. Belgique vii; *N. paviana*, Cambodia, BRENSKE, p. 416, Bull. Mus. Paris 1899 : n. spp.
- Ocnodius lepidus*, S. Australia, BLACKBURN, p. 38, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Odontria zealandica* and *striatum*, injurious habits, SMITH, p. 11, Entomologist xxxiii.
- Oxyserica* n. g. for *O. pygidialis*, n. sp. Madagascar, BRENSKE, p. 58, Berlin. ent. Zeitschr. xlv.
- Parthenoserica* n. g. for *P. sulcata*, n. sp. Madagascar, BRENSKE, p. 50, t. c.
- Pentelia crinita*, Sumatra, BRENSKE, p. 151, Mem. Soc. ent. Belgique vii, n. sp.
- Philacelota* n. g. p. 11, near *Schönherria* but aberrant, for. *P. submaculata*, p. 12, pl. fig. 21, Celebes, *sulana* Sula Mangoli, p. 13, n. spp., HELLER, Abh. Mus. Dresden ix, No. 5.
- Phylloserica* n. g. p. 65, for *Pleophylla unicolor*, *brenskii* and *P. candezei*, n. sp. Madagascar, p. 67, BRENSKE, Berlin. ent. Zeitschr. 1900.
- Plasioserica* n. g. for *P. viridula*, n. sp. Madagascar, BRENSKE, p. 46, t. c.
- Plectris lignicola*, *fungicola*, St. Vincent, ARROW, Tr. ent. Soc. London 1900, n. spp.
- Plotopuserica* n. g. for *P. darwiniana*, n. sp. Madagascar, BRENSKE, p. 59, Berlin. ent. Zeitschr. 1900.
- Plusioserica* n. g. for *Omalopia virescens* (Künck.) n. sp., Madagascar, BRENSKE, p. 45, t. c.
- Polyphylla*; revision of species, pp. 312–319; *P. laticollis mandshurica* subsp. n., p. 308; *P. alba vicaria* subsp. n., p. 309, SEMENOW, Horæ Soc. ent. Ross. xxxiv.
- P. schestakovi*, Chinese Turkestan, SEMENOW, p. 310, t. c. n. sp.
- Psednosserica* n. g. p. 60, for *P. amena* n. sp., Madagascar, p. 61, BRENSKE, Berlin. ent. Zeitschr. xlv.
- Pseudotrematoides* a valid genus, *P. frivaldszyi* note, BRENSKE, p. 150, BODEMEYER (131).
- Rhizotrogus bodemeyeri*, Asia minor, BRENSKE, p. 150, BODEMEYER (131), n. sp.
- Schizonychia nigrofusca*, Somaliland, ARROW, p. 24, P. Zool. Soc. London 1900; *S. singhalensis*, Ceylon, BRENSKE, p. 350, Ent. Zeit. Stettin lxi : n. spp.
- Scitula pruinosa*, *impressa*, Queensland, BRENSKE, *Semon Forschungsreisen v*, p. 622, n. spp.
- Sinocheilus limbatus*, p. 618, *cinctipennis*, p. 619, China, FAIRMAIRE, Ann. Soc. ent. France lxviii, n. spp.
- Tamnosserica* n. g. for *Emphania mutans* etc., BRENSKE, p. 55, Berlin. ent. Zeitschr. xlv.
- Tanyproctus turanicus*, Askhabad, REITTER, p. 52, Deutsche ent. Zeitschr. 1900, n. sp.
- Trachyserica* n. g., p. 53, for *T. longitarsa*, n. sp. Madagascar, p. 54, BRENSKE, Berlin. ent. Zeitschr. xlv.

*Rutelini.*

- Larvæ and habits of *Macraspis* and other Rutelids, OHAUS (956).  
 Revision of *Parastasiides* and list of the species, OHAUS, pp. 225-266,  
 Deutsche ent. Zeitschr. 1900.  
*Adoretus caliginosus* var. n. *bicolor*, BRENSKE, p. 38, pl. iv, figg. 3, 4, Ind.  
 Mus. Notes v.  
*A. bangalorensis*, E. India, BRENSKE, p. 38, pl. iv, figg. 1, 2, t. c.; *A. sin-*  
*ghalensis*, Ceylon, OHAUS, p. 362, Ent. Zeit. Stettin lxi : n. spp.  
*Anoplognathus concinnus*, Queensland, BLACKBURN, p. 40, Tr. R. Soc.  
 S. Austral. xxiv, n. sp.  
*Chlorota tristis*, St. Vincent, ARROW, Tr. ent. Soc. London 1900, n. sp.  
*Fruktorferia 6-maculata*, Tonkin, with var. *binaculata*, KRAATZ, p. 368,  
 Deutsche ent. Zeitschr. 1900, n. sp.  
*Leucothyreus vincentia*, St. Vincent, ARROW, Tr. ent. Soc. London 1900,  
 n. sp.  
*Lutera nigromaculata*, Tonkin, OHAUS, p. 261, Deutsche ent. Zeitschr.  
 1900, n. sp.  
*Parastasia melanocephaloides*, Sumatra, p. 238, *quadrimaculata*, Java and  
 Sumatra, p. 241, *kraatzii*, Sumatra, p. 242, *oberthuri*, Tonkin, p. 245,  
*punctulata*, Borneo and Sumatra, p. 252, *gestroi*, Borneo, p. 254,  
 OHAUS, Deutsche ent. Zeitschr. 1900, n. spp.  
*Pelidnota velutipes*, Grenada, ARROW, Tr. ent. Soc. London 1900, n. sp.  
*Phyllopertha sublimbata*, China, FAIRMAIRE, p. 620, Ann. Soc. ent. France  
 lxxviii, n. sp.  
*Polymachus brevipes*, notes on, OHAUS, p. 358, Deutsche ent. Zeitschr.  
 1900.  
*Xenoproctis ohausi* var. n. *congoana*, OHAUS, p. 262, t. c.

*Dynastini.*

- Chalcosoma*; characters of the forms, including *C. mollenkampii*, cuts,  
 GESTRO, pp. 396-399, Ann. Mus. Genova xl.  
*C. mollenkampii* Borneo, KOLBE, p. 52, Ent. Nachr. xxvi; note SENKA,  
 p. 94, t. c. : n. sp.  
*Cheiroplatys inermis*, Victoria, BLACKBURN, p. 212, P. Soc. Victoria xii,  
 n. sp.  
*Coptognathus lefranci*, characters, BOURGEOIS, p. 246, Bull. Soc. ent.  
 France 1900.  
*Cyclocephala vincentia*, St. Vincent, ARROW, p. 180, Tr. ent. Soc. London  
 1900, n. sp.  
*Heteroligus* n. g. for pt. of *Heteronychus*, KOLBE, p. 164, Ent. Nachr.  
 xxvi; and components, t. c. p. 327.  
*Heteronychus* divided into *Heteroligus* and *Heteronychus*, grouping of the  
 species of *Heteronychus*, KOLBE, pp. 164-166, Ent. Nachr. xxvi; *Hetero-*  
*nychus* sp. Java, natural history, ZEHTNER (1426).  
*H. wilmsi*, p. 166, *transvalicus*, p. 167, Transvaal, *consimilis*, *gerstaeckeri*,  
 E. Africa, p. 168, KOLBE, Ent. Nachr. xxvi; *H. bituberculatus*, p. 327,  
*alternans*, p. 328, *exiguus*, p. 329, Madagascar, *ascanius*, Senegal,  
*amplus*, Madagascar, p. 330, *memnonius*, p. 331, *pygidialis*, p. 332,  
 E. Africa, *approximans*, Transvaal, p. 333, *congoensis*, Congo, p. 334,  
*puerilis*, Angola, p. 335, KOLBE, t. c. : n. spp.  
*Oryctes vicinus*, Sokotra, GAHAN, p. 11, Bull. Liverp. Mus. iii, n. sp.  
*Phileurides*: larvæ and habits, OHAUS, p. 215 etc., Ent. Zeit. Stettin lxi.  
*Xylotrupes gideon* var., p. 382, pl. xxxv, fig. 1, SHARP in Willey Results iv.

*Cetoniini.*

[The following memoirs relate to *Cetoniini* viz.:—BORDAS (144), FAIRMAIRE (389, 394), HEATH (571), GAHAN (29), HELLER (575), JANSON (659), KRAATZ (760-765, 768, 769, 771, 773-778), OHAUS (956), PÉRINGUEY (989), WASMANN (1379), WATERHOUSE (1383).]

Larva of *Inca*, *Gymnetis*, *Euphoria* etc., OHAUS, p. 216 etc., Ent. Zeit. Stettin lxi.

The termitophilous and myrmecophilous *Cetoniidae* of S. Africa, WASMANN (1379).

*Aplasta cinctipennis*, E. Africa, KRAATZ, p. 76, Deutsche ent. Zeitschr. 1900, n. sp.

*Bothrothorax* subg. n. cf. *Phymatopteryx*.

*Cetonia aurata*, Corsican varieties, HELLER, pp. 54-57, Ent. Nachr. xxvi.

*Clinteria nigra*, corrected habitat, KRAATZ, p. 384, Deutsche ent. Zeitschr. 1900.

*Celorrhina nyassica*, Africa, KRAATZ, p. 367, t. c. n. sp.

*Cenochilus hospes*, *intrusus*, S. Africa, PÉRINGUEY, p. 71, Ann. Soc. ent. France lxi; *C. termiticola*, p. 67, pl. fig. 1, *braunsi*, p. 82, fig. 2, S. Africa, WASMANN, Illustr. Zeitschr. Ent. v : n. spp.

*Cosmiomorpha similis*, Formosa, FAIRMAIRE, p. 621, Ann. Soc. ent. France lxviii, n. sp.

*Cymophorus rufithorax*, E. Africa, KRAATZ, p. 10, Deutsche ent. Zeitschr. 1900, n. sp.

*Cyrrhocera* n. gen. for *Euchraea auropigmentalis*, KRAATZ, p. 11, t. c.

*Dicranobia* n. n. for *Dicranophorus* Reitt. nec auctt., REITTER, p. 11, Wien. ent. Zeit. xix.

*Dilochrosis nigra*, Key Is., KRAATZ, p. 74, Deutsche ent. Zeitschr. 1900, n. sp.

*Dilochrosis bennigseni*, New Guinea, *marginicollis*, Australia?, KRAATZ, p. 383, t. c. n. spp.

*Fornasinus darcisi*, Bopoto, KRAATZ, p. 220, t. c. n. sp.

*Eudicella hereroensis*, Africa, KRAATZ, p. 416, t. c. n. sp.

*Gnathocera truncata*, Tanganika, p. 463, *legrosi*, E. Africa, p. 465, JANSON, Ann. Soc. ent. Belgique xlv, n. spp.

*Glycyphana burschicola* varr., p. 186, *mollendorfi*, p. 187, *rufopicta*, p. 188, varr., KRAATZ, t. c.

*Golianthus* (sic) (*Sphyrrhina*) *wisei*, E. Africa, HEATH, p. 397, Ann. Nat. Hist. v, n. sp.

*Ingrisma* n. g. [Fairmaire, Ann. Soc. ent. Belgique xxxvii, p. 293, but omitted from Zool. Rec.], *whiteheadi*, Hainan island, WATERHOUSE, Ann. Nat. Hist. v, p. 310, n. sp.

*Megalorrhina harrisii* var. *pallescentis*, KRAATZ, p. 384, Deutsche ent. Zeitschr. 1900.

*Melanochraea* n. g. near *Dirhina*, for *M. iridioides*, n. sp. Madagascar, KRAATZ, p. 11, Deutsche ent. Zeitschr. 1900.

*Myrmecochilus* n. g. *Cremastochilides*, p. 83, for *M. marchalli* n. sp., Mashonaland, p. 84, pl. fig. 4, WASMANN, Illustr. Zeitschr. Ent. v.

*Ogmophorus* n. g. near *Cenochilus*, for *O. sulcicottis*, n. sp. Congo, KRAATZ, p. 13, Deutsche ent. Zeitschr. 1900.

*Pachnoda pygmaea* varr. *viridiflua*, p. 411, *humeralis*, *lutescens*, p. 412, KRAATZ, t. c.

*P. nigroplagiata*, *semiflava*, p. 410, Congo, KRAATZ, t. c. n. spp.

*Phonotenaria zambesiana*, Zambesi, KRAATZ, p. 78, t. c.; *P. fasciolata*, Usambara, with numerous varr., KRAATZ, p. 413, t. c. : n. spp.

*Phymatopteryx* (*Bothrothorax* subg. n.) *laevigatus*, p. 462, *B. mocquersyi*, p. 464, Africa, KRAATZ, Deutsche ent. Zeitschr. 1900, n. spp.

- Placodidus* n. g. p. 68, near *Scaptobius*, for *P. compransor*, n. sp. S. Africa, p. 69, PÉRINGUEY, Ann. Soc. ent. France lxi.
- Platnorhina recurva* var., KRAATZ, p. 267, Deutsche ent. Zeitschr. 1900.
- Plagochilus* n. g. near *Cenochilus*, pp. 65 & 82, for *P. intrusus*, n. sp., Mashonaland, p. 83, pl. fig. 3, and *P. argenteus* n. sp., p. 103, WASMANN, Illustr. Zeitschr. Ent. v.
- Pacilopharis levipennis*, Key island, KRAATZ, p. 75, Deutsche ent. Zeitschr. 1900, n. sp.
- Potosia cuprea* var. n. *obscurior*, MÜLLER, p. 22, Wien. ent. Zeit. xix.
- Protatia regalis* var. n. *horni*, KRAATZ, p. 144, Deutsche ent. Zeitschr. 1900; *P. soloriensis* var., KRAATZ, pp. 221, 222, t. c.; *P. cupreola*, corrected habitat, KRAATZ, p. 384, t. c.
- P. andrewsi*, Christmas Is., GAHAN, p. 98, pl. x, fig. 5, Mon. Christmas Island, n. sp.
- Pygora chamaeleon*, Madagascar, FAIRMAIRE, p. 86, Bull. Soc. ent. France 1900, n. sp.
- Rhadinotenia* n. g. for *Gametis*? *elytus* Westw., KRAATZ, p. 79, Deutsche ent. Zeitschr. 1900.
- Rhomborrhina mollenkampii*, Sumatra, KRAATZ, p. 415, t. c. n. sp.
- Smaragdesthes biplagiata*, W. Africa, KRAATZ, p. 75, t. c. n. sp.
- Stenotarnia bimaculata*, Madagascar, KRAATZ, p. 412, t. c. n. sp.
- Syntomopteryx* n. n. for *Brachypteryx* Kr., KRAATZ, p. 78, t. c.
- Teniodera whiteheadi*, p. 311, *T. (Euselates) galei*, p. 312, Hainan Is., WATERHOUSE, Ann. Nat. Hist. v, n. spp.
- Trichius podicalis*, p. 14, *tristiculus*, p. 15, W. Africa, KRAATZ, Deutsche ent. Zeitschr. 1899, n. spp.
- Trichoplus spectabilis, vicinus*, S. Africa, PÉRINGUEY, p. 70, Ann. Soc. ent. France lxi, n. spp.
- Trymodera duvivieri* and *aterrima* characters, KRAATZ, p. 80, Deutsche ent. Zeitschr. 1900.

# BUPRESTIDÆ.

[Cf. BLACKBURN (123), BRANCSIK (167), CSIKI (302), FAIRMAIRE (389, 391, 394), FORMANEK (441), GAHAN (983), HELLER (573), HAUSER (568), JAKOWLEFF (651 to 653), KERREMANS (691-694), REITTER (1101), ROGER (1126), SEMENOW (1195), SEURAT (1202), THÉRY (1318), WATERHOUSE (1385, 1386).]

- Acmæodera adasperula*, larva, habits, SEURAT, Ann. Sci. Nat. xi, pp. 22-25, cuts; *A. mexicana* n. n. for *interrupta* Kerr. 1897, KERREMANS, p. 310, Ann. Soc. ent. Belgique xlv.
- A. chalcocantha*, Ashabad, BRANCSIK, p. 99, Jahresh. Ver. Trencsen. xxi; *A. perrieri*, Madagascar, FAIRMAIRE, p. 87, Bull. Soc. ent. France 1900; *A. acuminata*, Mexico, KERREMANS, p. 378, Termes. Fuzetek xxiii : n. spp.
- Actenodes alluaudi* subsp. n. *chloroderus*, ALLUAUD, p. 18, Bull. Mus. Paris 1900.
- Agellia tricolor* Fairm. and *placida* Gerst., one species, KERREMANS, p. 283, Ann. Soc. ent. Belgique xlv.
- Agrilus*: habits of N. American, CHITTENDEN (616); *A. binominatus* n. n. for *villosostriatus* Kerr. nec Th., *caviceps* n. n. for *cavifrons* Fairm. nec Wat., *A. sinensis* Th.=(*splendidicollis* Fairm.), *erraticus* n. n. for *zonatus* Kerr., Cameroons 1899, *horni* n. n. for *blanchardi* Horn nec Saund., *inhabilis* n. n. for *ineptus* Horn nec Kerr., *mediocris* n. n. for *modicus* Kerr. 1893, nec Kerr. 1892, *nodiceps* n. n. for *nodifrons* Kerr. nec Wat., *nonfriedi* n. n. for *violaceus* Nonfr. nec Th., *suspectus* n. n.



- for *subcornutus* Kerr. nec Deyr., *ventripotens* n. n. for *ventralis* Kerr. nec Horn, KERREMANS, pp. 341, 342, t. c.; *A. variegatus* Castl. referred to *Diptolophotus*, KERREMANS, p. 324, t. c.
- A. atriplicis*, Algeria, THÉRY, p. 33, Bull. Soc. ent. France 1900; *A. weyersi*, *ampliatius*, p. 23, *maculipennis*, p. 24, *æqualis*, p. 25, *subornatus*, *splendidus*, p. 26, *funulus*, p. 27, *connexus*, *coraboides*, p. 28, *amorphus*, p. 29, *aurocyaneus*, *valens*, p. 30, *punctiventris*, p. 31, *subconsularis*, *convexus*, p. 32, *singularis*, *nervosus*, p. 33, *aberrans*, *cupratus*, p. 34, *videns*, *pyritosus*, p. 35, *læviventris*, p. 36, Sumatra, KERREMANS, Mem. Soc. ent. Belgique vii; *A. raapi*, Nias Is., *woodlarkianus*, Woodlark Is., p. 82, *lombokanus*, Lombok, p. 83, *subvalidus*, Borneo, p. 84, KERREMANS, t. c.; *A. velutinus*, Brazil, p. 324, *subpyropygus*, Sumatra, *erratus*, Brazil, *clarus*, Mexico, p. 325, *depressifrons*, p. 326, *guttifer*, p. 327, *ostentator*, Brazil, *depressicollis*, Guatemala, p. 328, *notabilis*, no locality, p. 329, *luculentus*, p. 330, *comptus*, Brazil, *frustrator*, Colombia, p. 331, *indagator*, *sacer*, p. 332, Brazil, *claveri*, *longus*, Colombia, p. 333, *purus*, *bellator*, Brazil, p. 334, *vendicator*, Sumatra, p. 335, *perakianus*, Perak, *opulentus*, New Guinea, p. 336, *nepos*, Borneo, p. 337, *dohrni*, p. 338, *testor*, *semivestitus*, p. 339, *oblatius*, Sumatra, *levifrons*, Cape Good Hope, p. 340, KERREMANS, Ann. Soc. ent. Belgique xlv; *A. medius*, Amazons, KERREMANS, p. 378, Termes. Fuzetek xxiii : n. spp.
- Amorphosoma*, characters, KERREMANS, p. 323, Ann. Soc. ent. Belgique xlv; *A. gibbifrons* Kerr., referred to *Agrilus*, KERREMANS, p. 324, t. c.
- A. planatum*, Andaman Ids., KERREMANS, p. 80, Mem. Soc. ent. Belgique vii; *A. spinipenne*, *elongatum*, Sumatra, KERREMANS, p. 15, t. c. : n. spp.
- Anthaxia æneopicea*, Cashimire, KERREMANS, p. 71, t. c.; *A. weyersi*, Sumatra, KERREMANS, p. 10, t. c.; *A. unicolor*, p. 298, *cyaneoviridis*, *fascipennis*, *brunneipennis*, p. 299, *alterna*, *brasiliensis*, p. 300, *occidentalis*, *splendidicollis*, p. 301, *plana*, *ocularis*, *subviridis*, p. 302, *funebria*, *minuta*, p. 303, Goyaz, Brazil, *hauseri*, E. Africa, p. 304, KERREMANS, Ann. Soc. ent. Belgique xlv : n. spp.
- Anthaxiomorphus*, *viridiceps*, Sumatra, KERREMANS, p. 37, Mem. Soc. ent. Belgique vii, n. sp.
- Aphanisticus agriloides*, *tristis*, p. 38, *cordicollis*, *weyersi*, p. 39, *sumatrensis*, p. 40, *viridipennis*, *affinis*, p. 41, *nigrocyaneus*, *ovalis*, p. 42, *levipennis*, p. 43, Sumatra, KERREMANS, t. c. n. spp.
- Astræus cyaneus*, New South Wales, KERREMANS, p. 295, Ann. Soc. ent. Belgique xlv, n. sp.
- Aurigena unicolor*, habits, MAYET, p. 229, Bull. Soc. ent. France 1900.
- Belionota sagittaria*, *prasina*, distinguished, KERREMANS, p. 304, Ann. Soc. ent. Belgique xlv.
- Brachys floricola*, Florida, *suavis*, p. 347, *taciturnus*, *debilis*, p. 348, Guatemala, KERREMANS, t. c. n. spp.
- Buprestis*; synonymy, KERREMANS, p. 295, t. c.
- Callimicra collaris*, p. 350, *pygmaea*, p. 351, Goyaz, KERREMANS, t. c. n. spp.
- Callopietus castelnaudi*=(*quedenfeldti* Richt.=*atrovirens* Nonfr.), KERREMANS, p. 283, t. c.
- Castalia*, the valid species, KERREMANS, p. 309, t. c.
- Chalcogenia suturalis* Kerr.=(*Chalcotenia cupreosuturalis* Fairm.), KERREMANS, p. 298, t. c.
- Chalcophora africana* Th. (as *Chalcotenia*)=(*telekyi* Fairm.), KERREMANS, p. 287, t. c.
- Chalcotenia cuprascens*=(*australis* Th.), *salamandra* Th.=(*vittata* Wat.), KERREMANS, p. 286, t. c.

- C. longicollis*, South East Ids., KERREMANS, p. 63, Mem. Soc. ent. Belgique vii, n. sp.
- Chrysaspis aurata* Fabr. = (*Chrysodema splendens* Nonfr.), p. 282, *C. vittigera* Kerr. is a valid species, also *kassaiensis* Kerr., p. 283, KERREMANS, Ann. Soc. ent. Belgique xlv.
- Chrysobothris borneensis* n. n. for *delectabilis* Kerr. nec Wat., *reitteri* n. n. for *inaequalis* Reitt. nec Wat., p. 304, *gabonica* n. n. for *parallela* Kerr. nec Deyr., p. 305, *curvicolis* n. n. for *rotundicollis* Kerr. nec Cast., p. 306, KERREMANS, t. c.
- C. andrewsi*, Christmas Is., WATERHOUSE, p. 99, pl. x, fig. 8, Monogr. Christmas Island; *C. weyersi*, Sumatra, KERREMANS, p. 11, Mem. Soc. ent. Belgique vii; *C. talautana*, Talaut Is., *deliana*, Sumatra, p. 72, *ignipicta*, Kei-Tooal Is., p. 73, *vicina*, *purpureicollis*, Woodlark Is., p. 74, *delectabilis*, Borneo, p. 75, *iridea*, Woodlark Is., p. 76, KERREMANS, t. c.; *C. solitaria*, *carminea*, Brazil, p. 305, *apicalis*, Mexico, p. 306, KERREMANS, Ann. Soc. ent. Belgique xlv : n. spp.
- Chrysodema mnizechi* = (*fairmairei* Kerr.), KERREMANS, p. 286, t. c.
- C. cyanicollis*, *ænicollis*, Djampea Is., *elongata*, Key Ids., KERREMANS, p. 62, Mem. Soc. ent. Belgique vii, n. spp.
- Cissaeoides*; components, KERREMANS, p. 322, Ann. Soc. ent. Belgique xlv.
- C. obesa*, N. Guinea, id. l. c. n. sp.
- Cisseis brachyformis* referred to *Hypocisseis*, KERREMANS, p. 323, t. c.
- C. pretiosissimus*, Sumatra, KERREMANS, p. 14, Mem. Soc. ent. Belgique vii; *C. fraterna*, New Guinea, KERREMANS, p. 80, t. c. : n. spp.
- Clema* n. g. near *Coræbus*, p. 590, for *C. deserti* n. sp., Transcaspiian, p. 592, SEMENOW, Horæ Soc. ent. Ross. xxxiv.
- Coræbus semipurpureus* Fairm. = (*fecæ* Kerr.), *C. beauchenei* (Fairm. as *Molibæus*) = (*fossulatus* Kerr.), *intricatus* Fairm. = (*sida* Kerr.), KERREMANS, p. 321, Ann. Soc. ent. Belgique xlv; *C. bed-li* Th. = (*chinensis* Kerr.), KERREMANS, p. 320, t. c.
- C. thoracellus*, China, *vicinus*, New Guinea, KERREMANS, p. 320, t. c.; *C. grandis*, Philippines, p. 77, *purpureus*, Sumatra, *dentipennis*, Manipur, p. 78, *transversus*, Leite, p. 79, KERREMANS, Mem. Soc. ent. Belgique vii; *C. weyersi*, p. 12, *picturellus*, *viridis*, p. 13, Sumatra, KERREMANS, t. c. : n. spp.
- Cypphogastra*; numerous synonyms, KERREMANS, pp. 287, 288, Ann. Soc. ent. Belgique xlv.
- C. staudingeri*, Dammer Is., KERREMANS, p. 65, Mem. Soc. ent. Belgique vii, n. sp.
- Demochroa indica*, India, CSIKI, p. 402, Termes. Fuzetek xxiii, n. sp.
- Demosis* n. g. for *Amorphosoma elongatum* Kerr. [above], KERREMANS, p. 322, Ann. Soc. ent. Belgique xlv.
- Diadora* n. g. for *Amorphosoma gibbicollis*, *lutea*, KERREMANS, p. 323, t. c.
- Dicerca latouchi*, China, FAIRMAIRE, p. 622, Ann. Soc. ent. France lxxiii, n. sp.
- Dicercomorpha*; synonymy, KERREMANS, p. 294, Ann. Soc. ent. Belgique xlv.
- D. aurocuprea*, Rossell Is., KERREMANS, p. 66, Mem. Soc. ent. Belgique vii, n. sp.
- Diceropygus viridis*, Woodlark Is., *tristis*, Tulagi, KERREMANS, p. 70, t. c. n. spp.
- Discoderes*, characters and composition, KERREMANS, p. 318, Ann. Soc. ent. Belgique xlv; *D. quadricornis* Fairm. referred to *Phlocteis*, KERREMANS, p. 324, t. c.
- D. perrieri*, Madagascar, FAIRMAIRE, p. 244, t. c. n. sp.
- Endelus parallelus*, *elongatus*, p. 44, *minutus*, *collaris*, p. 45, *cæruleus*, p. 46, Sumatra, KERREMANS, Mem. Soc. ent. Belgique vii; *E. signatus*, New Guinea, p. 84, *cornutus*, Batchian, p. 85, *diabolicus*, New Guinea,



- p. 86, KERREMANS, t. c.; *E. subcornutus*, New Guinea, KERREMANS, p. 344, Ann. Soc. ent. Belgique xlv; *E. sulcicollis*, Celebes, HELLER, p. 13, pl., fig. 6, Abh. Mus. Dresden ix, No. 5 : n. spp.
- Entomogaster*, the components, KERREMANS, p. 319, Ann. Soc. ent. Belgique xlv.
- E. perrieri*, *amplicollis*, Madagascar, FAIRMAIRE, p. 243, t. c. n. spp.
- Epimacha* n. g. for *Amorphosoma planatum* Kerr. [above], KERREMANS, p. 321, t. c.
- Ethon*, characters and components, KERREMANS, p. 319, t. c.
- Euchroma harperi* a valid species, KERREMANS, p. 283, t. c.
- Halecia gentilis* Horn, referred to *Agacocera*, KERREMANS, p. 284, t. c.
- H. sternalis*, Brazil, id. l. c. n. sp.
- Hypoprasia harpago* Fairm. = (*magnifica* Phil.), KERREMANS, p. 285, t. c.
- Iridotania plicata*, p. 9, *weyersi*, p. 10, Sumatra, KERREMANS, Mem. Soc. ent. Belgique vii; *I. viridiceps*, Java, KERREMANS, p. 61, t. c. : n. spp.
- I. latesulcata*, Amboina, KERREMANS, p. 285, Ann. Soc. ent. Belgique xlv, n. sp.
- Julodis*, synonymical notes, KERREMANS, pp. 310, 311, t. c.
- J. laticollis*, Somaliland, GAHAN, p. 25, pl. i, fig. 15, P. Zool. Soc. London 1900, n. sp.
- Leioptera claveri*, Colombia, KERREMANS, p. 350, Ann. Soc. ent. Belgique xlv, n. sp.
- Lius coruleus*, *aterrimus*, Goyaz, *timidus*, Guatemala, KERREMANS, p. 349, t. c. n. spp.
- Melanophila jakowlewi*, Transcaspian, SEMENOW, p. 589, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Melobas celestis*, Sumatra, KERREMANS, p. 14, Mem. Soc. ent. Belgique vii, n. sp.
- Melobasina* n. g. near *Melobasis*, p. 68, for *M. apicalis* n. sp., Tugela Is., p. 69, KERREMANS, t. c.
- Melobasis lugubrina*, New Guinea, KERREMANS, l. c.; *M. nigrita*, *acuta*, p. 296, *ignipicta*, p. 297, Australia, KERREMANS, Ann. Soc. ent. Belgique xlv : n. spp.
- Nascio lunaris*, N. S. Wales, KERREMANS, p. 294, t. c. n. sp.
- Neospades lateralis*, note on, KERREMANS, p. 319, t. c.
- Oedisterna animosa*, Transvaal, KERREMANS, p. 293, t. c. n. sp.
- Ovalisia* n. g. near *Pacilonota*, p. 67, for *O. insularis* n. sp., Tugela Is., p. 68, KERREMANS, Mem. Soc. ent. Belgique vii; *O. merged* in *Pacilonota*, KERREMANS, p. 294, Ann. Soc. ent. Belgique xlv.
- Rhaphidochila* subg. n., cf. *Sphenoptera*.
- Pachyschelus semilunaris*, Surinam, *dohrni*, Sumatra, KERREMANS, p. 346, t. c.; *P. weyersi*, Sumatra, KERREMANS, p. 60, Mem. Soc. ent. Belgique vii : n. spp.
- Paracephala thoracica*, Australia, KERREMANS, p. 343, Ann. Soc. ent. Belgique xlv, n. sp.
- Paracupta albivittis* = (*pyritosa* Boh.), p. 287; *P. dohrni* and *doriana* referred to *Chrysodema*, p. 286, KERREMANS, t. c.
- P. meyeri*, Fiji Ids., p. 63, *cupreosplendens*, New Hanover, *isabellina*, Isabelle Is., p. 64, KERREMANS, Mem. Soc. ent. Belgique vii; *P. pisciformis*, New Guinea, KERREMANS, p. 286, Ann. Soc. ent. Belgique xlv : n. spp.
- Paradora* n. gen. for *Discoderes pumicatus*, *saxosicollis*, *Phlocteis zonata*, and *Corabus impetiginosus*, KERREMANS, p. 323, t. c.
- Pasiphæa* Thoms., position is near *Halecia*, characters, KERREMANS, p. 285, t. c.
- Phanops areæ*, Bosnia, FORMANEK, p. 168, Wien. ent. Zeit. xix, n. sp.
- Phlocteis elongata*, Congo, KERREMANS, p. 323, Ann. Soc. ent. Belgique xlv, n. sp.

- Pacilonota cyanipes* Say = (*debilis* Lec.), KERREMANS, p. 294, t. c.  
*Polybothris*, numerous synonyms, KERREMANS, pp. 291–293, t. c.  
*P. affinis*, p. 292, *luteopicta*, p. 293, Madagascar, KERREMANS, t. c. n. spp.  
*Polycesta haueri*, E. Africa, KERREMANS, p. 309, t. c. n. sp.  
*Polyonychus*, characters and composition, KERREMANS, p. 321, t. c.  
*Pseudochrysodema aruensis* Kerr. referred to *Paracupta*, KERREMANS, p. 287, t. c.  
*Psiloptera*; much synonymy, pp. 288, 289, 293; *P. aureomicans* Nonfr. referred to *Halicia*, p. 284, KERREMANS, t. c.  
*P. macalisteri*, Egypt, WATERHOUSE, p. 219, Ann. Nat. Hist. vi; *P. somalica*, Somaliland, GAHAN, p. 25, pl. i, fig. 10, P. Zool. Soc. London 1900; *P. baliana*, Bali, KERREMANS, p. 66, Mem. Soc. ent. Belgique vii; *P. cupriventris*, Argentina, p. 288, *stictica*, p. 289, *clavareaui*, Congo, *victor*, Transvaal, p. 290, KERREMANS, Ann. Soc. ent. Belgique xlv : n. spp.  
*Ptosima sericea* Kerr. referred to *Sponsor*, KERREMANS, p. 310, t. c.  
*Sambooides* n. g., p. 16, for *S. viridana* n. sp., Sumatra, p. 17, KERREMANS, Mem. Soc. ent. Belgique vii.  
*Sambus opacus*, p. 17, *pictus*, *weyersi*, p. 18, *gratiosus*, *æneus*, p. 19, *pauper*, *simplex*, *delectabilis*, p. 20, KERREMANS, t. c.; *S. fulgidicollis*, Sikkim, *simplex*, Roon Is., KERREMANS, p. 81, t. c.; *S. prainæ*, Himalaya, HAUSER, p. 111, Deutsche ent. Zeitschr. 1900; *S. fulvopictus*, Sumatra, KERREMANS, p. 321, Ann. Soc. ent. Belgique xlv : n. spp.  
*Sphenoptera antiqua* and allies, revision, JAKOWLEFF, pp. 199–206, Horæ Soc. ent. Ross. xxxiv.  
*S. (Chrysoblemma) alcides*, p. 84, *alfredi*, p. 85, Tunis, REITTER, Deutsche ent. Zeitschr. 1900; *S. (Hoplistura) artamonowi*, Abyssinia, p. 96, *S. (Chrysoblemma) tschitscherini*, Transcaspian, p. 98, *zarudnyi*, E. Persia, p. 99, *S. (Deudora) hamata*, Turkestan, p. 101, *S. kozłowi*, W. China, p. 102, *abbreviata*, Armenia, p. 104, *stenophthalma*, Caucasus, p. 105, JAKOWLEFF, Horæ Soc. ent. Ross. xxxiv; *S. diluta*, p. 202, Armenia, *spreti*, Russian Turkestan, p. 203, JAKOWLEFF, t. c.; *S. (Deudora) afflicta*, Turkestan, p. 406, *serena*, p. 407, *fraterna*, p. 408, Asia Minor, *allecta*, Transcaucasus, p. 410, *addenda*, Asia Minor, p. 413, *misella*, Transcaucasus, p. 415, *conjuncta*, Turkestan, p. 416, *jejuna*, p. 417, *congrua*, p. 419, Araxes Valley, Syria, p. 420, *bucharica*, Buchara, p. 422, *S. korshinskii*, p. 423, Buchara, *edmundi*, Syria, p. 425, *cyphogastra*, Turkestan, p. 426, *manifesta*, Transcaucasus, p. 428, *vidua*, Changai, p. 429, *serripes*, Transcaspian, p. 431, *S. (Chilostetha) elegans*, Transcaucasus, p. 433, *sokolowi*, Turkestan, p. 434, *S. (Hoplistura) convicta*, Asia Minor, p. 435, *madagascariensis*, Madagascar, p. 437, *S. (Hoplandrocneme) arguta*, Persia, p. 440, *S. (Chrysoblemma) ahngeri*, Transcaspian, p. 441, *gracilis*, Caspian, p. 442, *S. (Raphidochila* subg. n.) *nox*, Persia, p. 445, *S. ebenina*, Alai, p. 498, *atramentaria*, Armenia, p. 500, *bodemeyeri*, p. 501, *aliena*, p. 503, *S. (Deudora) danieli*, p. 504, Asia Minor, *segregata*, Transcaucasus, p. 506, *S. (Hoplistura) leontiewi*, Abyssinia, p. 507, JAKOWLEFF, t. c. : n. spp.  
*Sponsorinus* n. g. near *Trachys*, p. 241, for *S. perrieri*, *latus*, n. spp., Madagascar, p. 242, FAIRMAIRE, Ann. Soc. ent. Belgique xlv.  
*Stenianthe metallina*, Madagascar, FAIRMAIRE, p. 243, t. c. n. sp.  
*Steraspis staudingeri*, E. Africa, KERREMANS, p. 282, t. c. n. sp.  
*Sternocera kustai* Nonfr., note on, KERREMANS, p. 311, t. c.  
*Stigmodera*; extensive synonymy, especially of Thomson's species, KERREMANS, pp. 312, 313, t. c.; *S.*; extensive synonymy, not here reproduced, pp. 41–48; *S. subgrata* n. n. for *campestris* Kerr., p. 41, *dulcis* n. n. for *colorata* Kerr., p. 41, BLACKBURN, Tr. R. Soc. S. Austral. xxiv.

- S. insignicollis*, p. 45, *rubriventris*, p. 46, W. Australia, BLACKBURN, t. c.; *S. clara*, p. 313, *apicerubra*, *pictiventris*, p. 314, *cyaniventris*, *spectabilis*, p. 315, *caudata*, *gentilis*, *scutellaris*, p. 316, *subcostata*, *diversa*, *tripartita*, p. 317, Australia, KERREMANS, Ann. Soc. ent. Belgique xlv : n. spp.
- Strigulia cycloderus*; Fairm. (as *Agrilus*) = *lacerta* Kerr., KERREMANS, p. 319, t. c.
- Taphrocerus cupriceps*, Goyaz, KERREMANS, p. 344, t. c.; *T. bifasciatus*, Amazons, KERREMANS, p. 379, Termes. Fuzetek xxiii : n. spp.
- Tetragonoschema fossicollis*, Brazil, KERREMANS, p. 297, Ann. Soc. ent. Belgique xlv, n. sp.
- Thrinopyge* and species redefined, KERREMANS, pp. 307–309, t. c.
- Toxoscelus singularis*, Sumatra, KERREMANS, p. 12, Mem. Soc. ent. Belgique vii, n. sp.
- Trachys clermonti*, Montpellier, ROGER, p. 32, Echange xvi; *T. obesa*, Zambesi, *antiqua*, New Guinea, p. 345, KERREMANS, Ann. Soc. ent. Belgique xlv; *T. vermiculata*, *verna*, p. 48, *gravida*, *dejecta*, p. 49, *sparsuta*, *cyanura*, p. 50, *aqualis*, *cineta*, *pilifrons*, p. 51, *costipennis*, *corpulentus*, p. 52, *lineata*, p. 53, *nobilitata*, *affinis*, p. 54, *perplexa*, *dissimilis*, p. 55, *curvifrons*, *media*, p. 56, *weyersi*, *modesta*, p. 57, *delectabilis*, *amabilis*, p. 58, *aneola*, *congener*, p. 59, *tetra*, p. 60, Sumatra, KERREMANS, Mem. Soc. ent. Belgique vii; *T. fergussonica*, Fergusson Is., *brunceiana*, Brunei, *asiatica*, Kashmir, p. 87, *borneensis*, Borneo, p. 88, *andaica*, New Guinea, p. 88, *banguayana*, *sincera*, p. 89, Banguay, *insidiosa*, Fergusson Is., *fraterna*, Philippines, p. 90, *modica*, *placida*, New Guinea, p. 91, *konbirensis*, Bengal, *ignota*, Montarjuno, *moesta*, New Guinea, p. 92, *prudens*, Fergusson Is., p. 93, KERREMANS, t. c. : n. spp.
- Velutia* n. g. near *Toxoscelus*, p. 342, for *V. sericea* n. sp., Brazil, p. 343, KERREMANS, Ann. Soc. ent. Belgique xlv.

## THROSCIDÆ.

*Throsus dermestoides*, variation, CHAMPION, p. 12, Ent. Mag. xxxvi.

## EUCNEMIDÆ.

[Cf. BLACKBURN (123, 125).]

- The Australian genera, BLACKBURN, pp. 215–217, P. Soc. Victoria xii.
- Disaptothorax* n. g., p. 219, for *D. koebelei* n. sp., Queensland, p. 220, BLACKBURN, t. c.
- Dromæolus thoracicus*, Lea, referred to *Nematodes*, BLACKBURN, p. 219, t. c.
- Dyscharachthis* n. g., p. 217, for *D. brevipennis* n. sp., Australia, BLACKBURN, t. c.
- Dyscolocerus concolor*, p. 224, *victoriensis*, p. 225, Australia, BLACKBURN, t. c. n. spp.
- Dystrigonisthis* n. g., p. 221, for *D. paradoxus* n. sp., Queensland, p. 222, BLACKBURN, t. c.
- Entomophthalmus uniformis*, Queensland, BLACKBURN, p. 224, t. c. n. sp.
- Eucnemis capucina*, pupa, HACKER, p. 266, Illustr. Zeitschr. Ent. v.
- Microrhagus cairnesensis*, Queensland, BLACKBURN, p. 222, P. Soc. Victoria xii, n. sp.
- Neolycaon* n. n. for *Lycaon* Bonv. nec Brookes, BLACKBURN, p. 49, Tr. R. Soc. S. Austral. xxiv.
- Trigonopleurus rugulosus* Bonv. = (*Dromæolus nigricollis* Lea), BLACKBURN, p. 219, P. Soc. Victoria xii.

## ELATERIDÆ.

[Cf. BORDAS (144), BLACKBURN (123, 124, 125), DU BUYSSON (214, 215), CANDÈZE (224), GAHAN (480, 983), HAUSER (569), HELLER (573), KINCAID (711), REITTER (1092, 1096, 1101), O. SCHWARZ (1170 to 1175), SEMENOW (1195), WATERHOUSE (1386), XAMBEU (1420).]

*Adelocera grisea*, Buchara, SCHWARZ, p. 98, Deutsche ent. Zeitschr. 1900, n. sp.

*Adelocera anthracina*, Madagascar, CANDÈZE, p. 77, Ann. Soc. ent. Belgique xlv, n. sp.

*Æolus centralis, cylindricus*, Goyaz, CANDÈZE, p. 86, t. c.; *A. brunnei-ventris*, p. 316, *goyasiensis*, p. 317, Brazil, *longicornis*, Surinam, p. 318, *brevipennis*, Brazil, p. 319, SCHWARZ, Deutsche ent. Zeitschr. 1900 : n. spp.

*Agelasinus antennalis*, Peru, SCHWARZ, p. 354, t. c. n. sp.

*Agonischius ruficollis*, Sumatra, SCHWARZ, p. 96, t. c.; *A. murinus, placidus*, Borneo, *basilaris*, Australia, CANDÈZE, p. 98, Ann. Soc. ent. Belgique xlv : n. spp.

*Agriotes constrictus*, Asia Minor, REITTER, p. 86, Deutsche ent. Zeitschr. 1900, n. sp.

*Agrypnus longicornis*, Somaliland, GAHAN, p. 26, pl. i, fig. 11, P. Zool. Soc. London 1900, n. sp.

*Alampes boliviensis, corymbitoides*, S. America, CANDÈZE, Ann. Soc. ent. Belgique xlv, n. sp.

*Alaomorphus* n. g., p. 141, for *A. candezei* n. sp., E. Africa, p. 143, HAUSER, Deutsche ent. Zeitschr. 1900.

*Alaus longipennis*, Usambara, SCHWARZ, p. 145, t. c.; *A. sulcicollis*, Sokotra, GAHAN, p. 11, Bull. Liverp. Mus. iii; *A. depressicollis*, Palau, SCHWARZ, p. 305, Deutsche ent. Zeitschr. 1900; *A. bubonius*, Bangkei, *staudingeri*, Talaut Is., *morphnus*, p. 80, *striatus*, N. Guinea, *hybris*, Key Is., p. 81, CANDÈZE, Ann. Soc. ent. Belgique xlv : n. spp.

*Anchastomorphus sexmaculatus*, Goyaz, SCHWARZ, p. 328, Deutsche ent. Zeitschr. 1900, n. sp.

*Anchastus discoidalis*, Christmas Is., WATERHOUSE, p. 100, Mon. Christmas Island; *A. latus*, E. Africa, *semistriatus*, Cameroons, SCHWARZ, p. 151, Deutsche ent. Zeitschr. 1900; *A. ferrugineipennis*, Borneo, *zambianus*, Congo, CANDÈZE, p. 91, Ann. Soc. ent. Belgique xlv : n. spp.

*Anoplischius dorsalis*, Mexico, SCHWARZ, p. 310, Deutsche ent. Zeitschr. 1900; *A. conicus, anemicus*, Bolivia, CANDÈZE, p. 84, Ann. Soc. ent. Belgique xlv : n. spp.

*Arrhaphes apicalis*, Sumatra, SCHWARZ, p. 94, Deutsche ent. Zeitschr. 1900, n. sp.

*Arctapila* subg. n., cf. *Cryptohypnus*.

*Athous villosus* var. n. *caucasicus*, BUYSSON, p. 232, Bull. Soc. ent. France - 1900.

*A. leptoninus*, Piedmont, p. 106, *judicariensis*, Tyrol, p. 107, *altaicus*, Altai, p. 108, *urgensis*, Amur, p. 109, SCHWARZ, Deutsche ent. Zeitschr. 1900; *A. mesmini*, Caucasus, BUYSSON, p. 231, Bull. Soc. ent. France 1900; *A. holdereri*, Manschan, REITTER, p. 159, pl. i, fig. 5, Wien. ent. Zeit. xix : n. spp.

*Atractosomus nigerrimus*, Mexico, SCHWARZ, p. 312, Deutsche ent. Zeitschr. 1900, n. sp.

*Caleodinus* n. g. near *Hapaterus*, for *C. fairmairei* n. sp., Madagascar, CANDÈZE, p. 98, Ann. Soc. ent. Belgique xlv.

*Cardiophorus hauseri, variipennis*, p. 100, *inornis*, p. 101, *bucharensis*,



- Centr. Asia, *impressiventris*, Asia Minor, p. 102, *foveiventris*, *foveolatus*, Greece, p. 103, *oertzeni*, Crete, *sahlbergi*, Amu-Darja, p. 104, SCHWARZ, Deutsche ent. Zeitschr. 1900; *C. athoides*, *excisus*, p. 152, *rufiventris*, p. 153, *vadosus*, p. 154, *brevicornis*, p. 155, *breviusculus*, *quadristriatus*, p. 156, *adrastoides*, p. 157, *subdentatus*, p. 158, *gregarius*, *testaceipennis*, p. 159, *obscuripes*, p. 160, Africa, SCHWARZ, t. c.; *C. sumptuosus*, Madagascar, CANDÈZE, p. 93, Ann. Soc. ent. Belgique xlv : n. spp.
- Chrosia angusticollis*, Victoria, BLACKBURN, p. 114, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Clon* n. g. *Campylides*, p. 594, for *C. cerambycinus*, p. 596, *umbratus*, p. 597, n. spp., Buchara, SEMENOW, Horæ Soc. ent. Ross. xxxiv.
- Corymbites altaicus*, p. 110, *tibialis*, p. 111, Altai, SCHWARZ, Deutsche ent. Zeitschr. 1900; *C. tibeticus*, Tibet, p. 95, *fallaciosus*, Kashmir, *exotans*, Punjab, *suavis*, Tasmania, *australicus*, Australia, p. 96, CANDÈZE, Ann. Soc. ent. Belgique xlv : n. spp.
- Cosmesus bimaculatus*, p. 347, *fuscoapicalis*, *apicalis*, p. 348, *luteipes*, Brazil, *robustus*, Peru, 349, *maculipennis*, p. 350, *flavovittatus*, Brazil, *admiratoides*, Peru, p. 351, *annulatus*, p. 352, *inscriptus*, *discicollis*, p. 353, Brazil, SCHWARZ, Deutsche ent. Zeitschr. 1900, n. spp.
- Crepidius blepharipes*, Mexico, SCHWARZ, p. 311, t. c.; *C. ornatus*, Peru, CANDÈZE, p. 85, Ann. Soc. ent. Belgique xlv : n. spp.
- Cryptohypnus*, the European, DU BUYSSON (215) with *Archapila* subg. n., pp. 227 & 247, for *C. brucki* Cand.; *C. littoralis*, larva, KINCAID, p. 375, pl. xxv, figg. 1, 2, P. Washington Ac. ii.
- C. grouvellei*, France, BUYSSON, p. 250 (215); *C. indicus*, *tactus*, India, p. 92, *quadritactus*, Borneo, p. 93, CANDÈZE, Ann. Soc. ent. Belgique xlv : n. spp.
- Ctenoplus nitidipennis*, p. 355, *nigripennis*, p. 356, Borneo, SCHWARZ, Deutsche ent. Zeitschr. 1900, n. spp.
- Deromercus niger*, Chili, SCHWARZ, p. 329, t. c.; [*Deromercus*] *anthracinus*, *vittipennis*, Chili, CANDÈZE, p. 91, Ann. Soc. ent. Belgique xlv : n. spp.
- Diploconus nigriceps*, Sumatra, SCHWARZ, p. 95, Deutsche ent. Zeitschr. 1900; *D. nitidicollis*, Celebes, p. 341, *basalis*, Sumatra, p. 342, *ruficollis*, New Guinea, p. 343, SCHWARZ, t. c. : n. spp.
- Drasterius bimaculatus* var., BUYSSON (215) pp. 261-263.
- D. cruciatus*, Borneo, *gibbulus*, Guinea, p. 86, *opacus*, *australis*, *spissus*, p. 87, Australia, CANDÈZE, Ann. Soc. ent. Belgique xlv : n. spp.
- Echthrogaster* n. g. *Campylidarum*?, p. 213, for *E. lugubris* n. sp., S. Australia, p. 215, BLACKBURN, P. Soc. Victoria xii.
- Elatér forticornis*, Balkans, SCHWARZ, p. 99, Deutsche ent. Zeitschr. 1900; *E. radula*, Punjab, *tinctipes*, Australia, CANDÈZE, p. 87, Ann. Soc. ent. Belgique xlv : n. spp.
- Euphemus plasomii*, E. Africa, CANDÈZE, p. 79, t. c. n. sp.
- Glypheus piceus*, Australia, CANDÈZE, p. 85, t. c. n. sp.
- Glyphonyx africanus*, Guinea, CANDÈZE, p. 98, t. c.; *G. ferrugineus*, Sumatra, SCHWARZ, p. 97, Deutsche ent. Zeitschr. 1900 : n. spp.
- Hapateus jugulatus*, Australia, CANDÈZE, p. 97, Ann. Soc. ent. Belgique xlv, n. sp.
- Hemirhipus scriptus*, Surinam, CANDÈZE, p. 81, t. c. n. sp.
- Heteroderes lineolus*, p. 359, *dorsalis*, p. 360, W. Africa, SCHWARZ, Deutsche ent. Zeitschr. 1900; *H. nigrofasciatus*, p. 146, *ferrugineus*, *inornatus*, p. 147, *opaculus*, *cuneolus*, p. 148, Trop. Africa, SCHWARZ, t. c. : n. spp.
- Hypnoides musculus*, larva, KINCAID, p. 374, pl. xxv, figg. 3-7, P. Washington Ac. ii.
- Ischiodontus lateralis*, La Plata, p. 84, *rufipennis*, Goyaz, p. 85, CANDÈZE, Ann. Soc. ent. Belgique xlv, n. spp.

- Lacon equalis*, Kashmir, CANDÈZE, p. 78, t. c.; *L. farinensis*, S. Australia, BLACKBURN, p. 49, Tr. R. Soc. S. Austral. xxiv : n. spp.
- Limoniatus crassipes*, Turkey, SCHWARZ, p. 106, Deutsche ent. Zeitschr. 1900; *L. nigrinus*, Kashmir, *collaris*, New S. Wales, CANDÈZE, p. 94, Ann. Soc. ent. Belgique xliv : n. spp.
- Lycoreus alluaudi*, Madagascar, CANDÈZE, p. 79, t. c.; *L. imperialis*, Madagascar, SCHWARZ, p. 302, Deutsche ent. Zeitschr. 1900 : n. spp.
- Megapenthes asperulatus*, Burma, CANDÈZE, p. 88, Ann. Soc. ent. Belgique xliv; *M. spinipennis*, *lacer*, Sumatra, SCHWARZ, p. 91, Deutsche ent. Zeitschr. 1900; *M. andrewsi*, Christmas Is., WATERHOUSE, p. 101, pl. x, fig. 7, Mon. Christmas Island : n. spp.
- Melanotus planipennis*, Kashmir, *opicus*, *perlonges*, p. 94, Punjab, CANDÈZE, Ann. Soc. ent. Belgique xliv, n. spp.
- Melanoxanthus* and *Megapenthes* not distinct, SCHWARZ, p. 320, Deutsche ent. Zeitschr. 1900.
- Melan. rugulosus*, p. 149, *humeralis*, p. 150, East Africa, SCHWARZ, t. c.; *M. fumosus*, p. 92, *flavobasalis*, p. 93, Sumatra, SCHWARZ, t. c.; *M. biligatus*, *major*, Borneo, *princeps*, Sumatra, p. 88, *gracilis*, Java, *circumcinctus*, Malacca, *flavangulus*, Sanghir, *festucalis*, Sumbawa, p. 89, *frivolutus*, Timor, *deletus*, *flavocinctus*, Borneo, *guttatus*, Madagascar, p. 90, CANDÈZE, Ann. Soc. ent. Belgique xliv; *M. dubius*, Sumatra, p. 319, *ambiguus*, Burma, p. 320, *fucosus*, p. 321, *rubripennis*, *abdominalis*, p. 322, *flavovittatus*, p. 323, *flavofasciatus*, *nigrolateralis*, p. 324, Borneo, *egregius*, Java, p. 325, *cylindricollis*, Sumatra, p. 326, *nuralis*, Madagascar, p. 327, SCHWARZ, Deutsche ent. Zeitschr. 1900; *M. archeducalis*, Celebes, HELLER, p. 14, pl. fig. 4, Abh. Mus. Dresden ix, No. 5 : n. spp.
- Melanthoides niger*, E. Africa, SCHWARZ, p. 146, Deutsche ent. Zeitschr. 1900, n. sp.
- Mocquersia* n. g. near *Pyrapractus*, p. 369, for *M. unicolor* n. sp., Madagascar, p. 370, FLEUTIAUX, Bull. Mus. Paris 1899.
- Monadicus biguttatus*, Bolivia, CANDÈZE, p. 92, Ann. Soc. ent. Belgique xliv, n. sp.
- Monocrepidius minusculus*, Sumatra, SCHWARZ, p. 90, Deutsche ent. Zeitschr. 1900; *M. bipartitus*, p. 313, *peruanus*, p. 314, *lituratus*, p. 315, Peru, *servittatus*, p. 316, Colombia, SCHWARZ, t. c.; *M. laceratus*, Goyaz, CANDÈZE, p. 85, Ann. Soc. ent. Belgique xliv : n. spp.
- Oistus submetallicus*, Costa Rica, CANDÈZE, p. 83, t. c. n. sp.
- Parapomachilius* n. g., p. 356, for *P. incertus*, Brazil, p. 339, *ambiguus*, Paraguay, p. 340, n. spp., SCHWARZ, Deutsche ent. Zeitschr. 1900.
- Parasaphes quinquesulcatus*, p. 114, *bicolor*, p. 115, Victoria, BLACKBURN, Tr. R. Soc. S. Austral. xxiv, n. spp.
- Phedomenus scriptus*, Madagascar, FLEUTIAUX, p. 368, Bull. Mus. Paris 1900, n. sp.
- Pleonomus laticornis*, Buchara, REITTER, p. 88, Ent. Nachr. xxvi, n. sp.
- Pomachilioides* n. g., p. 356, for *P. cruciatus*, p. 344, *dimidiatus*, p. 345, *basalis*, *melanurus*, p. 346, n. spp., Peru, SCHWARZ, Deutsche ent. Zeitschr. 1900.
- Pomachilius angustulus*, Bolivia, CANDÈZE, p. 91, Ann. Soc. ent. Belgique xliv; *P. sulcifrons*, p. 330, *maculifrons*, p. 331, *marginalis*, p. 332, *spinus*, p. 333, Peru, *discicollis*, *quadrimaculatus*, p. 334, *saxmaculatus*, p. 335, Brazil, *apicalis*, Peru, *pullus*, p. 336, *pusillus*, p. 337, Ecuador, *agrioides*, p. 338, *hamatus*, p. 339, Brazil, SCHWARZ, Deutsche ent. Zeitschr. 1900 : n. spp.
- Pristiophus madagascariensis*, Madagascar, FLEUTIAUX, p. 369, Bull. Mus. Paris 1899, n. sp.
- Psephus major*, *feralis*, Centr. Africa, *orientalis*, Philippines, CANDÈZE, p. 83, Ann. Soc. ent. Belgique xliv, n. spp.

- Psiloniscus quadrilineatus*, Mexico, SCHWARZ, p. 328, Deutsche ent. Zeitschr. 1900, n. sp.
- Semiotus intermedius* var. n. *delineatus*, CANDÈZE, p. 82, Ann. Soc. ent. Belgique xliv.
- S. sanguinolentus*, Bolivia, *exsolutus*, *flavangulus*, Colombia, p. 82, CANDÈZE, t. c.; *S. nigrolineatus*, Brazil, *antennatus*, Colombia, SCHWARZ, p. 306, Deutsche ent. Zeitschr. 1900 : n. spp.
- Spheniscosomus permacer*, Sumatra, CANDÈZE, p. 94, Ann. Soc. ent. Belgique xliv, n. sp.
- Spilus crassus*, Brazil, CANDÈZE, p. 84, t. c. n. sp.
- Stenopus* n. g. near *Heterocrepidius*, p. 307, for *S. angustus*, *elongatus*, p. 308, *rubripennis*, p. 309, n. spp., Cauca Valley, SCHWARZ, Deutsche ent. Zeitschr. 1900.
- Tabula* n. g. near *Glypheus*, p. 367, for *T. depressissima* n. sp., Madagascar, p. 368, FLEUTIAUX, Bull. Mus. Paris 1899.
- Tetrigus murrayi*, Christmas Is., WATERHOUSE, p. 100, Mon. Christmas Island, n. sp.
- Tilotarsus opacus*, p. 78, *adeloceroideus*, p. 79, W. Africa, CANDÈZE, Ann. Soc. ent. Belgique xliv, n. spp.
- Trieres* n. g. near *Myrmodes*, for *T. ramitarsus* n. sp., Australia, CANDÈZE, p. 78, t. c.

## CEBRIONIDÆ.

Subterranean movement of larvæ, BOURGEOIS (161).

*Genecerus* referred to *Dascillidæ*, q. v., GAHAN, p. 27, P. Zool. Soc. London 1900.

## RHIPICERIDÆ.

- Ennometes*, a valid genus; *Callirhipis ruficornis* Gray, referred to it, BLACKBURN, p. 50, Tr. R. Soc. S. Austral. xxiv.
- Rhipidocera mystacina* and *femoralis* distinguished, BLACKBURN, p. 50, Tr. R. Soc. S. Austral. xxiv.
- Sandalus bourgeoisi*, China, THÉRY, p. 33, Naturaliste xxii; *S. chinensis*, China, FAIRMAIRE, p. 623, Ann. Soc. ent. France lxxviii : n. spp.

## DASCILLIDÆ.

- Genecerus nebulosus*, Somaliland, GAHAN, p. 26, pl. i, fig. 9, P. Zool. Soc. London 1900, n. sp.
- Microcara fuegensis*, Patagonia, BOURGEOIS, p. 111, Ann. Soc. ent. Belgique xliv, n. sp.

## MALACODERMIDÆ.

- [Cf. ABAILLE (1, 2), BLACKBURN (123, 124), BORDAS (144), BOURGEOIS (131, 154-160, 162-164), FAIRMAIRE (389, 396), GAHAN (479, 480), GORHAM (512), OLIVIER (957-961), PIC (1009, 1010, 1021, 1023-1026, 1034), REITTER (1092, 1101), SCHILSKY (1154), SHARP (1208), UHAGON (1346), XAMBEU (1420).]
- Solier's types of *Lampyrides* referred to modern genera, OLIVIER, pp. 371, 372, Bull. Mus. Paris 1899.
- Problematic Lycid larvæ described and discussed, pp. 77-79; a luminous larva or adult ♀ *Lampyrid*, pp. 79, 80, HANITSCH, J. Straits Asiat. Soc., No. 34.

- Remarkable Lycid or Lampyrid larva, pp. xxxv, figg. 4-4b, p. 383, SHARP, in Willey Results iv.
- An aquatic Lampyrid, ANNANDALE, p. 862, P. Zool. Soc. London 1900.
- Acantholycus integer*, Congo, BOURGEOIS, p. 141, Ann. Soc. ent. Belgique xlv, n. sp.
- Anexodes* n. g. near *Charopus*, for *A. albicauda*, p. 164, *longiventris*, p. 165, n. spp. S. Africa, ABEILLE, Rev. Ent. franc. xix.
- Anthocomus apricus*, Natal, GORHAM, p. 78, Ann. Nat. Hist. v, n. sp.
- Apalochrus nitens*, Mashonaland, GORHAM, p. 80, t. c. n. sp.
- Attalus coloratus* var. n. *moraguesi*, p. 336, *abeillei* n. n. for *jocosus* Peyr. p. 352, UHAGON, An. Soc. Espan. xxix.
- Attalus atrocyaneus*, p. 339, *laufferi*, p. 341, Spain, UHAGON, t. c.; *A. abeillei*, Tunis, PIC, p. 53, Echange xvi; *A. (Miris) simoni, exquisitus*, S. Africa, p. 176, *bisonatus*, Senegal, p. 177, ABEILLE, Rev. Ent. franc. xix; *A. ornatipennis*, Mashonaland, GORHAM, p. 77, Ann. Nat. Hist. v, n. spp.
- Calochromus cucullatus*, p. 56, *simillimus*, p. 57, *rostratus*, p. 58, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxiv, n. spp.
- Calopteron gloriosum, textile*, Ecuador, BOURGEOIS, p. 662, Ann. Soc. ent. France lxviii, n. spp.
- Cantharis*; for numerous var. ? new, of palæarctic, see PIC, pp. 85, 86, Echange xvi; *C. discoidea* var. n. *carreti*, BOURGEOIS, p. 181, Bull. Soc. ent. France 1900; *C. livida* var. n. *adusta ciliciensis*, BOURGEOIS, p. 152, Bodemeyer (131).
- C. tunisicus*, Tunis, PIC, p. 86, Echange xvi, ? n. sp.; *C. anatolica*, p. 151, *bodemeyeri*, p. 152, *eurynota*, p. 153, Asia Minor, BOURGEOIS, Bodemeyer (131): n. spp.
- Cautires confluenta*, N. Guinea, BOURGEOIS, p. 420, Ann. Mus. Genova xl, n. sp.
- Chatomalachius æneus*, xxxvii 5, *staudingeri*, 6, Bucharâ, SCHILSKY, Käf. Eur., n. spp.
- Chalcas fairmairei*, Orinoco, BOURGEOIS, p. 118, Bull. Soc. ent. France 1900, n. sp.
- Chalicornus* = (*Cephaloncus* Westw. = *Trogliscus* Peyr.), ABEILLE, p. 170, Rev. Ent. franc. xix.
- C. ferox, 3-guttatus*, S. Africa, id. t. c. p. 169.
- Charopus cyanopterus*, Natal, GORHAM, p. 75, Ann. Nat. Hist. v, n. sp.
- Chauliognathus scabripennis*, Colombia, BOURGEOIS, p. 118, Bull. Soc. ent. France 1900, n. sp.
- Colotes hispanus*, Granada, UHAGON, An. Soc. Espan. xxix, p. 39; *C. sellatus*, S. Africa, ABEILLE, p. 165, Rev. Ent. franc. xix; *C. contaminatus*, Ceylon, ABEILLE, p. 178, t. c. n. spp.
- Colpometopus* n. g. near *Cyrtosus*, p. 170, for *C. pithecus* n. sp., S. Africa, p. 171, ABEILLE, t. c.
- Danacæa tristis*, Turkestan, 9, *spinirollis*, Syria, 10, SCHILSKY, Käf. Eur. xxxvii; *D. albella*, Anatolia, REITTER, p. 86, Deutsche ent. Zeitschr. 1900: n. spp.
- Dasytes incrassatus* Algeria, xxxvii, 1, *altaicus*, Altai, xxxvii, 2, SCHILSKY, Käf. Eur. n. spp.
- Dasytiscus vestitus* var. *henoni*, PIC, p. 88, Echange xvi.
- D. (Haplothrix) vagus*, xxxvii, 8, ? Mediterranean, SCHILSKY, Käf. Eur. n. sp.
- Diaphanes mammosus*, Sumatra, OLIVIER, p. 235, Ann. Soc. ent. Belgique xlv; *D. seminudus, wroughtoni*, India, OLIVIER, p. 47, Bull. Soc. ent. France 1900; *D. wroughtoni* ♂, *D. seminudus* ♀, figures, Du Buysson, p. 426, J. Bombay Soc. xiii: n. spp.
- Dinometopus* n. g. *Melyrides*, for *D. natalensis*, n. sp., Estcourt, GORHAM, p. 76, Ann. Nat. Hist. v.



- Ebaeus nanschanensis*, Centr. Asia, REITTER, p. 160, Wien. ent. Zeitschr. xix, n. sp.
- Haplocnemus alluaudi*, Tunis, PIC, p. 165, Bull. Soc. ent. France 1900, n. sp.
- Haplotylus rustus* var. n. *tschoffeni*, BOURGEOIS, p. 145, Ann. Soc. ent. Belgique xlv.
- Hedybius anceps*, *marshalli*, Natal, GORHAM, p. 81, Ann. Nat. Hist. v; *H. simoni*, p. 171, *longicoxis*, *sycophanta*, p. 172, *prænotatus*, *fasciculatus*, p. 173, *maculifer*, p. 174, S. Africa, ABEILLE, Rev. Ent. franc. xix : n. spp.
- Idgia foveifrons*, Formosa, FAIRMAIRE, p. 629, Ann. Soc. ent. France lxxviii, n. sp.
- Illops corniculatus* = (*Malachius, trabeatus* Fairm.), ABEILLE, p. 170, Rev. Ent. franc. xix.
- Laius tibialis*, Christmas Is., GAHAN, p. 102, pl. x, fig. 4, Mon. Christmas Island, n. sp.
- Lampyrus tinctoria*, *imbecilla*, S. Africa, GORHAM, p. 84 Ann. Nat. Hist. v, n. spp.
- Lecontea* n. n. for *Pyrractomena* Lee. nec Sol., OLIVIER, p. 371, Bull. Mus. Paris 1899.
- Lucidina clavareau*, Sumatra, OLIVIER, p. 234, Ann. Soc. ent. Belgique xlv, n. sp.
- Lucidota simoni*, Venezuela, OLIVIER, p. 62, Ann. Soc. ent. France lxxix, n. sp.
- Luciola lusitanica*, larva and female, P. GROUVELLE, p. 315, Bull. Soc. ent. France 1900; *L. picea*, larva, OLIVIER, p. 236, Ann. Soc. ent. Belgique xlv.
- L. cavifrons*, Madagascar, with larva, FAIRMAIRE, pp. 361, 362, Bull. Soc. ent. France 1900; *L. recticollis*, Sumatra, OLIVIER, p. 237, Ann. Soc. ent. Belgique xlv : n. spp.
- Lycus distanti* ♀, GORHAM, p. 83, Ann. Nat. Hist. v; *L. obtusatus* var. n. *flavicans*, BOURGEOIS, p. 144, Ann. Soc. ent. Belgique xlv; *L. latissimus* var. n. *nocquersyi*, BOURGEOIS, p. 658, Ann. Soc. ent. France lxxviii; *L. rufosternalis* Bl. referred to *Erriclaes*, BOURGEOIS, p. 432, Ann. Mus. Genova xl; *L. latissimus* var. n. *decoloratus*, BOURGEOIS, p. 141, Ann. Soc. ent. Belgique xlv, cf. also *Acantholycus*, *Haplotylus*.
- Lycus duvivieri*, Congo, BOURGEOIS, p. 142, Ann. Soc. ent. Belgique xlv; *L. cornipennis*, p. 659, *prodigiosus*, p. 660, Sierra Leone, *L. (Lopholycus) staudingeri*, p. 658, Africa, *L. (Thoracocalon) brevirostris*, Ecuador, p. 661, BOURGEOIS, Ann. Soc. ent. France lxxviii : n. spp.
- Lygistopterus oberthuri*, p. 664, *fastuosus*, p. 665, Bolivia, BOURGEOIS, t. c. n. spp.
- Malachius montanus* var. n. *viridistratus*, BOURGEOIS, p. 156, Bodemeyer (131).
- Malchinus obscuripes*, Constantinople, PIC, p. 87, Echange xvi, n. sp.
- Malthinus*; characters of numerous European, BOURGEOIS, pp. 91-94, Bull. Soc. ent. France 1900; *M. pallidipennis* var. *laterufus*, *batnensis* var. *atriceps*, PIC, p. 54, Echange xvi; *M. maritimus* redescribed, PIC, p. 384, Bull. Soc. ent. France 1900.
- M. laticollis*, *mathieui*, Algeria, p. 14, *maculipennis*, Syria, *batnensis*, *pallidipennis*, Algeria, p. 15, PIC, Bull. Soc. zool. France xxv; *M. externus*, Algeria, *caisensis*, Syria, *rosina*, Asia Minor, PIC, p. 37, Echange xvi; *M. brevior*, p. 54, *tamarisci*, p. 55, Algeria, PIC, t. c.; *M. algericus*, Rio-Salado, PIC, p. 19, t. c. n. sp. ?; *M. kraatzi*, Spain, *delagrangei*, Syria, PIC, p. 61, t. c.; *M. (Progentes) incrassicornis*, p. 86, *femoralis*, Algeria, *scriptipennis*, Spain, p. 87, PIC, t. c. n. spp. ?; *M. varus*, Algeria, BOURGEOIS, p. 94, Bull. Soc. ent. France 1900; *M. mathieui*, Oran, PIC, p. 124, Bull. Soc. ent. France 1900 : n. spp.

- Melyris insularis*, Sokotra, GAHAN, p. 8, Bull. Liverp. Mus. iii, n. sp.  
*Metacantharis arazicola* var. n. *disparipennis*, BOURGEOIS, p. 153, Bode-meyer (131).  
*M. taurigrada* Asia Minor, id. p. 154, t. c. n. sp.  
*Metriorrhynchus insignipennis*, Tasmania, p. 52, *cliens*, *flagellatus*, p. 53, *miles*, *mentitor*, p. 54, *paradoxa*, *eremita*, p. 55, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxiv, n. spp.  
*Myrmecophasma nietneri*, gen. et sp., described, ABEILLE, pp. 178, 179, Rev. Ent. franc. xix.  
*Ototreta* n. g. near *Luciola*, for *O. weyersi*, p. 237, *fornicata*, p. 238, n. spp. Sumatra, OLIVIER, Ann. Soc. ent. Belgique xlv; *O. gravis*, Borneo, OLIVIER, p. 285, Bull. Soc. ent. France 1900, n. sp.  
*Pagurodactylus* n. g., p. 78, *Malachiodes*, for *P. vitticeps* n. sp., Natal, p. 79, GORHAM, Ann. Nat. Hist. v.  
*Philhedonus* n. g., near *Hedybius*, for *P. coronatus* n. sp., Mashonaland, GORHAM, p. 82, t. c.  
*Phosphonopterus montandoni*, Wallachia, BOURGEOIS, p. 337, Bull. Soc. ent. France 1900, n. sp.  
*Photinus ineptus*, Venezuela, OLIVIER, p. 64, Ann. Soc. ent. France lxi, n. sp.  
*Plateros alternatus*, Colombia, BOURGEOIS, p. 663, Ann. Soc. ent. France lxviii, n. sp.  
*Podabrus angustus*, China, FAIRMAIRE, p. 624, Ann. Soc. ent. France lxviii, n. sp.  
*Podistrina peyerimhoffi*, Alpes maritimes, BOURGEOIS, p. 379, Bull. Soc. ent. France 1900; *P. algerica*, Algeria, BOURGEOIS, p. 284, t. c.; *P. normandi*, Tunis, PIC, p. 77, Echange xvi : n. spp.  
*Ponyalis* n. g. near *Lyponis*, for *P. laticornis*, n. sp. China, FAIRMAIRE, p. 623, Ann. Soc. ent. France lxviii.  
*Prosthaptus* n. g., near *Malthodes*, p. 85, for *P. claudus*, n. sp., Mashonaland, p. 86, GORHAM, Ann. Nat. Hist. v.  
*Pseudocolotes* n. g. near *Colotes*, p. 166, for the following new spp. from S. Africa, *cribripennis*, *plagiatus*, p. 167, *buccator*, *agnatus*, p. 168, ABEILLE, Rev. Ent. franc. xix.  
*Psilothrix latipennis*, Rhodes, PIC, p. 77, Echange xvi, n. sp.  
*Rhagonycha nigrocapitata*, *lyncea*, Asia Minor, BOURGEOIS, p. 155, Bode-meyer (131) n. spp.  
*Rhagophthalmus gibbosulus*, China, FAIRMAIRE, p. 624, Ann. Soc. ent. France lxviii, n. sp.  
*Selenurus fernshawensis*, Victoria, BLACKBURN, p. 115, Tr. R. Soc. S. Austral. xxiv, n. sp.  
*Telephorus pulchellus* var. ? *notophilus*, BLACKBURN, p. 116, t. c.  
*T. confusus*, *hypopelius*, p. 625, *hexizanthus*, *fraternus*, p. 626, *bigibbulus*, *monochrous*, p. 627, *foveicollis*, *limbolarius*, p. 628, *sanguinosus*, p. 629, China, FAIRMAIRE, Ann. Soc. ent. France lxviii, n. spp.  
*Trichalus cyaneescens*, p. 422, *languidus*, New Guinea, *blanchardi*, Aru, p. 423, *imitator*, p. 424, *incrassatus*, p. 425, *sordescens*, p. 426, *abel-latus*, New Guinea, *ternatensis*, Ternate, p. 427, *albertini*, p. 428, *cerberus*, p. 429, New Guinea, *perplexus*, Ternate, p. 430, BOURGEOIS, Ann. Mus. Genova xl; *T. funereus*, Victoria, BLACKBURN, p. 51, Tr. R. Soc. S. Austral. xxiv : n. spp.  
*Trichocable ramicornis*, Turkestan, SCHILSKY, Käf. Eur. xxvii 4, n. sp.  
*Xylobanus semiflabellatus* var. n. *xanthaspis*, BOURGEOIS, p. 148, Ann. Soc. ent. Belgique xlv.  
*X. fuscatus*, Congo, id. l. c., n. sp.  
*Zelotypus* n. g. for *Collops violaceipennis* Motsch., ABEILLE, p. 180, Rev. Ent. franc. xix.  
*Zygia lineata* var. n. *atriceps*, PIC, p. 9, Mt. Mus. Hamburg xvii

## CLERIDÆ.

[Cf. BLACKBURN (124), GORHAM (512), KRAATZ (766, 770), LOHDE (825), PIC (1036), SCHENKLING (1152, 1153).]

Catalogue of *Clerider*, upwards of 1800 species, LOHDE (825).

Revision of Australian, with tabulation of genera and correction of many generic names, BLACKBURN, Tr. R. Soc. S. Austral. xxiv, pp. 116-140.

*Aulicus cræsus*, p. 127, *dives*, p. 128, *nigrohirtus*, p. 129, *robustus*, *mundus*, p. 131, *eremita*, *amabilis*, p. 133, *cribratus*, p. 134, *modestus*, p. 135, Australia, BLACKBURN, t. c. n. spp.

*Axina parcepunctata*, p. 388, *basalis*, p. 389, *conspicua*, *plagiata*, p. 390, *munda*, p. 391, Goyaz, SCHENKLING, Deutsche ent. Zeitschr. 1900, n. spp.

*Callimerus horni*, Ceylon, KRAATZ, p. 189, t. c. n. sp.

*Clerus latesellatus*, Mexico, SCHENKLING, p. 18, Mt. Mus. Hamburg xvii; *C. subjunctus*, *fascicollis*, p. 393, *fasciatus*, p. 394, *rufimanus*, *faustus*, p. 395, S. America, SCHENKLING, Deutsche ent. Zeitschr. 1900: n. spp.

*Corynetes concolor*, Natal, GORHAM, p. 75, Ann. Nat. Hist. v, n. sp.

*Cymatodera guatemalensis*, Guatemala, SCHENKLING, p. 385, Deutsche ent. Zeitschr. 1900, n. sp.

*Dolichopsis auronitens*, Natal, GORHAM, Ann. Nat. Hist. v, n. sp.

*Dyslophocera* n. g. near *Trogodendron*, p. 19, for *D. mirabilis*, n. sp. Rockhampton, p. 20, SCHENKLING, Mt. Mus. Hamburg xvii.

*Emmepus pallidipennis*, Algeria, PIC (1036) and Frelon viii, p. 1 sep. pag., n. sp.

*Epiclines eburneocincta* var. n. *nigripes*, SCHENKLING, Deutsche ent. Zeitschr. 1900, p. 397.

*E. similis*, Chili, SCHENKLING, p. 397, t. c. n. sp.

*Epiphlocus simplex*, Bolivia, p. 397, *parvulus*, Goyaz, p. 398, SCHENKLING, t. c. n. spp.

*Gyponyx*, characters, SCHENKLING, p. 14, Mt. Mus. Hamburg xvii.

*G. tricolor*, p. 15, *pallidus*, p. 17, S. Africa, SCHENKLING, t. c. n. spp.

*Ichnea præusta* var. n. *femoralis*, SCHENKLING, p. 401, Deutsche ent. Zeitschr. 1900.

*I. procera*, Peru, p. 399, *I. (Pseudichnea) eliminata*, Goyaz, p. 400, SCHENKLING, t. c. n. spp.

*Isolemidia bipunctata*, Goyaz, SCHENKLING, p. 399, t. c. n. sp.

*Natalis debilis*, S. Australia, BLACKBURN, p. 120, Tr. R. Soc. S. Austral. xxiv, n. sp.

*Neoscerobiger* n. g. p. 136, type *Opilo patricius* Klug, with *N. rauciceps* n. sp., Victoria, p. 137, BLACKBURN, t. c.

*Necrobia foveicollis*, Brazil, SCHENKLING, p. 20, Mt. Mus. Hamburg xvii, n. sp.

*Opilo nigerrimus*, Ikutha, KRAATZ, p. 296, Deutsche ent. Zeitschr. 1900, n. sp.

*Orthrius carinifrons*, Japan, SCHENKLING, p. 17, Mt. Mus. Hamburg xvii, n. sp.

*Pelonium ramosum*, Bahia, p. 402, *subapicale*, Amazons, p. 403, *ruficeps*, *jucundum*, p. 404, *placidum*, p. 405, Goyaz, *P. ? tuberculipenne*, Chili, p. 406, *P. tarsale*, Goyaz, p. 407, *meieri*, S. America ?, *kraatzi*, Goyaz, p. 408, *geminum*, Peru, p. 409, SCHENKLING, Deutsche ent. Zeitschr. 1900, n. spp.

*Phloxopopus undulatus*, S. Africa, GORHAM, p. 72, Ann. Nat. Hist. v, n. sp.

*Platnoptera pectoralis*, Goyaz, SCHENKLING, p. 401, Deutsche ent. Zeitschr. 1900, n. sp.

- Priocera unifasciata*, Brazil, SCHENKLING, p. 14, Mt. Mus. Hamburg xvii ;  
*P. podagrica*, p. 385, *quadrinotata*, p. 386, *angulata*, p. 387, Goyaz,  
 SCHENKLING, Deutsche ent. Zeitschr. 1900 : n. spp.  
*Stigmatium ceylonicum*, Ceylon, KRAATZ, p. 190, t. c. n. sp.  
*Tarsostenodes* n. g. for *T. simulator* n. sp. Victoria, p. 139, BLACKBURN, Tr.  
 R. Soc. S. Austral. xxiv.  
*Tenerus laterimaculatus*, Ceylon, KRAATZ, p. 192, Deutsche ent. Zeitschr.  
 1900, n. sp.  
*Thalerochenis* n. n. for *Chlorochenis* Kuwert, LOHDE, p. 145, Ent. Zeit.  
 Stettin lxi.  
*Thanasimus bifasciatus*, *ceylonicus* Ceylon, KRAATZ, p. 191, Deutsche ent.  
 Zeitschr. 1900, n. spp.  
*Tillus compressicornis* Kl. referred to *Philocalus*, GORHAM, p. 71, Ann.  
 Nat. Hist. v.  
*T. palastinus*, Jericho, PIC, Frelon viii, p. 2, sep. pag.; *T. capensis*,  
 S. Africa, SCHENKLING, p. 13, Mt. Mus. Hamburg xvii : n. spp.  
*Trichodes turkestanicus* var. n. *apicalis*, p. 99, pl. iv, fig. 3a, BRANCHIE,  
 Jahresh. Ver. Trencsen xxi.  
*T. tugelanus*, Natal, GORHAM, p. 73, Ann. Nat. Hist. v, n. sp.

## PTINIDÆ.

- [Cf. ALLUAUD (22), GAHAN (478, 479), HOPKINS (599), PIC (1007; 1016,  
 1018, 1019, 1020, 1024, 1031, 1032), SCHILSKY (1154).]  
 Stridulating organs of *Anobiides*, GAHAN (478).  
 Notes on Schilsky's Heft. xxxvi of Küster, PIC, pp. 6, 7, Miscell. ent. viii.  
*Cenocara boleti*, Madagascar, ALLUAUD, p. 21, Bull. Soc. ent. France 1900,  
 n. sp.  
*Ernobius oertzeni*, Greece, SCHILSKY, Käf. Eur. xxxvii, 14, n. sp.  
*Mesocolopus substriatus*, Caucasus, SCHILSKY, op. cit. 15, n. sp.  
*Neoptinus* n. g. p. 102, for *N. parvus* n. sp., Christmas Is., p. 103, pl. x,  
 fig. 10, GAHAN, Monogr. Christmas Island.  
*Paranobium* n. g. for *P. posticum* n. sp., Christmas Is., pl. x, fig. 9, GAHAN,  
 p. 104, t. c.  
*Ptinus krugeri* n. n. for *lepidus* Pér. nec Villa, PIC, p. 289, Bull. Soc. ent.  
 France 1900; *P. martini* var. *rubi*, PIC, p. 55, Echange xvi.  
*P. (Pseudoptinus) subcarnatus*, Algeria, PIC, p. 55, t. c.; *P. (Pseudoptinus)*  
*anatolicus*, Anatolia, *P. circassicus*, Circassia, p. 48, *leuthneri*, Syria,  
 p. 49, PIC, Bull. Soc. ent. France 1900; *P. (Gynopterius) californicus*,  
 California, PIC, p. 89, Echange xvi; *P. unilineatus* Mexico, p. 252,  
*submetallicus* Brazil, p. 253, *hirtithorax*, *gorhami*, Chili, p. 254, PIC,  
 Ann. Soc. ent. Belgique xlv; *P. groulti*, *obscuripes*, Brazil, PIC, p. 211,  
 Naturaliste xxii; *P. chilensis*, Valparaiso, PIC, p. 10, Mt. Mus.  
 Hamburg xvii, Beih. ii : n. spp.  
*Thaptor variegatus*, *tessellatus*, *brevipennis*, Brazil, PIC, p. 68, Naturaliste  
 xxii, n. spp.  
*Theca limnichoides*, Madagascar, ALLUAUD, p. 20, Bull. Soc. ent. France  
 1900; *T. (Sculptotheca) hilleri*, Japan, SCHILSKY, Käf. Eur. xxxvii,  
 16 : n. spp.  
*Trichodesma nigromaculata*, Burma, *regalis*, E. India, *goyavensis*, Brazil,  
 PIC, p. 57, Naturaliste xxii, n. spp.  
*Xyletinus suturatus*, Madagascar, ALLUAUD, p. 20, Bull. Soc. ent. France  
 1900, n. sp.



## BOSTRICHIDÆ.

*Dinoderus substratus*, synonymy, DONISTHORPE, p. 16, Ent. Rec. xii.

*Lyctus canaliculatus* as an injurious insect, BUREAU (195).

*Micrapate* Casey = (*Bostrychulus* Lesne), LESNE, p. 46, Bull. Soc. ent. France 1900.

*Patea* Casey, is part of *Dinoderus*, LESNE, l. c.

*Phonopate porrecta*, Congo, LESNE, p. 426, Ann. Soc. ent. Belgique xlv, n. sp.

*Stephanopachys* n. g. for *Dinoderus substriatus* Payk., WATERHOUSE, Ann. Nat. Hist. 1888, p. 348. [Omitted from Zoological Record previously; cf. DONISTHORPE, Ent. Rec. xii, p. 17.]

*Xylopertha picea* Ol. = (*heydeni* Schilsky), LESNE, p. 47, Bull. Soc. ent. France 1900; *X. pustulata, chevrieri*, synonymy, LESNE, p. 11, t. c.

*X. transvena*, Congo, LESNE, p. 426, Ann. Soc. ent. Belgique xlv, n. sp.

## CIODIDÆ.

[Cf. CASEY (229), PERKINS (990), SCHILSKY (1154).]

*Apterocis* n. g. p. 265, with *A. lanaiensis*, Lanai, pl. x, fig. 14, *montanus*, Maui, p. 266, *variabilis*, Oahu, *hawaiiensis*, p. 267, *rufo-notatus*, Hawaii, *impunctatus*, Oahu, *variegatus*, Maui, p. 268, *ornatipennis*, Lanai, fig. 15, *strigosus*, Molokai, p. 269, *subaneus*, Maui, *hystrix*, Lanai, p. 270, PERKINS, Fauna Hawaiiensis ii, n. spp.

*Cis nigrorugosus*, Amur, xxxvii, 66, *græcus*, Morea, 68, *sibiricus*, Amur, 75, SCHILSKY, Käf. Eur., n. spp.

*Cis breviformis*, Molokai, p. 255, *nesiotes, cognatissimus*, Kauai etc., p. 256, *unicus*, Hawaii, p. 258, *simulator*, Maui, p. 259, *kauaiensis*, Kauai, p. 261, *molokaiensis*, Molokai, *haleakalæ*, Maui, pl. x, fig. 17, *mirabilis*, Kauai, p. 262, *fallax*, Oahu, *minus*, Maui, p. 263, *angustiformis*, Oahu, p. 265, PERKINS, Fauna Hawaiiensis ii, n. spp.

*Maphæa* n. g. near *Plesiocis*, p. 165, for *M. blaisdelli* n. sp., California, p. 166, CASEY, J. N. York Ent. Soc. viii.

## TENEBRIONIDÆ and RHYSOPAUSIDÆ.

[Cf. ALLUAUD (26), ARROW (36), CHOBOUT (244, 246), BLACKBURN (123, 124), BORDAS (144), BRANCSIK (167), FAIRMAIRE (389 to 393), FLEISCHER (427), GAHAN (478, 983), GESTRO (492), REITTER (131, 1092, 1094, 1097, 1098, 1099, 1101), VAULOGER (1352), XAMBEU (1420).]

List of *Rhysopausidæ*, GESTRO, Ann. Mus. Genova xl, pp. 746-748.

*Adelostoma granti*, Sokotra, GAHAN, p. 10, Bull. Liverp. Mus. iii, n. sp.

*Agræcus* n. g. near *Amarsenes*, p. 21, for *A. chalcoides* n. sp., Madagascar, p. 22, FAIRMAIRE, Bull. Soc. ent. France 1900.

*Amarygmus funebris*, Christmas Is., ARROW, p. 107, Monogr. Christmas Island, n. sp.

*Amiantus sarcostatus*, Somaliland, GAHAN, p. 28, P. Zool. Soc. London 1900, n. sp.

*Ammozoum*, the species, REITTER, p. 300, Ent. Nachr. xxvi.

*Anemia sakalaoa*, Madagascar, ALLUAUD, p. 18, Bull. Mus. Paris 1900, n. sp.

*Arthrodinus* n. g. for an undetermined sp. from Teneriffe, REITTER, p. 299, Ent. Nachr. xxvi.

*Arthrodosis* n. g. for part of *Arthrodeis*, REITTER, p. 299, Ent. Nachr. xxvi.

- Asidesthes* n. g. near *Scotinesthes*, p. 246, for *A. perrieri* n. sp., Madagascar, p. 247, FAIRMAIRE, Ann. Soc. ent. Belgique xlv.
- Bariacus* n. g. near *Asarelius*, for *B. costulatus* n. sp., Borneo, FAIRMAIRE, p. 45, Bull. Soc. ent. France 1900.
- Blaps medusa*, Centr. Asia, REITTER, p. 161, pl. i, fig. 6, Wien. ent. Zeit. xix, n. sp.
- Bradymerus seminitidus*, Christmas Is., ARROW, p. 106, Monogr. Christmas Island, n. sp.
- Camaria microdera*, China, FAIRMAIRE, p. 630, Ann. Soc. ent. France lxxviii, n. sp.
- Chalcopterus kochi*, S. Australia, BLACKBURN, p. 59, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Crypticus quisquilius* var. n. *opacus*, BRANCSIK, p. 100, Jahresh. Ver. Trencsen. xxi.
- Dendarius transcaspicus*, Ashabad, BRANCSIK, p. 101, t. c. n. sp.
- Deretus* n. g. *Helopinae* near *Eubæus*, for *D. denticollis*, n. sp. Sokotra, GAHAN, p. 10, Bull. Liverp. Mus. iii.
- Diaphanidus* n. g. near *Erodinus*, p. 299, for *Arthrodeis antennatus* Reitt. and *D. semenowi* n. sp., Turkestan, p. 302, REITTER, Ent. Nachr. xvi.
- Dichillus explanatus*, *pusillus*, Buchara, REITTER, p. 54, Deutsche ent. Zeitschr. 1900, n. spp.
- Dila persiana*, Persia, 16-*striata*, Turkestan, p. 295, *bucharica*, Buchara, p. 296, REITTER, Ent. Nachr. xvi, n. spp.
- Erodinus* n. g. for an undetermined species from Teneriffe, REITTER, p. 299, t. c.
- Euglyptonotus* n. g. *Rhyssopausinæ* for *E. magretti* n. sp., Erythrea, GESTRO, p. 744, Ann. Mus. Genova xl.
- Eusyntelia opacicollis*, Sokotra, GAHAN, p. 9, Bull. Liverp. Mus. iii, n. sp.
- Gonodera rufoaenea*, Asia Minor, REITTER, p. 159, Bodemeyer (131), n. sp.
- Helopini*, monograph of N. African, VAULOGER, Ann. Soc. ent. France lxxviii, pp. 669-722.
- Helops*; cf. also *Polorinus*; *H. nitidicollis* varr. n. *thalassinus*, *nigricans*, p. 688, *obtusatus* var. n. *deserticola*, p. 688, *batnensis* varr. n. *soricinus*, *biskrensis*, p. 692, *echinatus* n. n. for *hirtus* Seidl. nec Muls., p. 692, VAULOGER, t. c.
- H. diabolinus*, Ashabad, BRANCSIK, p. 101, pl. iv, fig. 5, Jahresh. Ver. Trencsen. xxi; *H. (Stenomax) verrucosus*, *martini*, p. 683, *litigiosus*, p. 684, *H. (Diatirus) pulvinatus*, p. 687, *piger*, p. 688, *H. (Günarus) rufulus*, p. 689, *H. (Catomidius) ciliatus*, *comatus*, *anthicoides*, p. 690, *submetallicus*, *capillatus*, p. 693, *H. (Catomes) amabilis*, *sicardi*, p. 696, VAULOGER, t. c.; *H. bodemeyeri*, p. 156, *H. (Odocnemis) protinus*, *lordiacelis*, p. 157, *H. (Cylindrinotus) funestoides*, p. 158, Asia Minor, REITTER, Bodemeyer (131) : n. spp.
- Histeromorphus undatus*, Sokotra, GAHAN, p. 8, Bull. Liverp. Mus. iii, n. sp.
- Hypocilibe veternosa*, S. Australia, BLACKBURN, p. 140, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Læna pici*, Syria, REITTER, p. 87, Deutsche ent. Zeitschr. 1900, n. sp.
- Melanimon sabulorum*, Tunisia, CHABAUT, p. 31, Bull. Soc. ent. France 1900, n. sp.
- Misolampus goudoti*, Algeria, VAULOGER, p. 674, Ann. Soc. ent. France lxxviii, n. sp.
- Nyctelia longiplicata*, Patagonia, FAIRMAIRE, p. 111, Ann. Soc. ent. Belgique xlv, n. sp.
- Nyctobates microcephalus*, China, FAIRMAIRE, p. 629, Ann. Soc. ent. France 1900; *N. carbonaria*, Christmas Is., ARROW, p. 106, Monogr. Christmas Island : n. spp.
- Opatrum dubium*, Christmas Is., ARROW, -

- Palorus orientalis*, Transcaucasus, *subfilum*, Biskra, FLEISCHER, p. 237, Wien. ent. Zeit. xix, n. spp.
- Parecatius* n. g. for *Scotinesthes costulatus*, and *P. plicatulus* n. sp., Madagascar, FAIRMAIRE, p. 245, Ann. Soc. ent. Belgique xlv.
- Pelorusinus* subg. n. of *Helops*, VAULOGER, p. 680, Ann. Soc. ent. France lxviii; *H. (P.) linearis* n. n. for *cribripennis* All. nec Lucas, *H. (P.) villosipennis* var. n. *normandi*, p. 681, *anthracinus* var. *tardus* n. n. = (*obesus* Luc.), p. 681, id. t. c.
- Phaleria bedeli*, Algeria, CHOBAUT, p. 340, Bull. Soc. ent. France 1900, n. sp.
- Platyscelis* (*Oodescelis*) *sahlbergi*, Turkestan, REITTER, Wien. ent. Zeit. xix, n. sp.
- Praogenia nigra*, Somaliland, GAHAN, p. 30, P. Zool. Soc. London 1900, n. sp.
- Prosodes rugicostata*, *vincens*, *suturangula*, Centr. Asia, REITTER, p. 55, Deutsche ent. Zeitschr. 1900, n. spp.
- Rhophobas asperatus* Motsch. = (*Nyctobates granifera* Fairm.), KOLBE, p. 74, Ent. Nachr. xxvi.
- Rhytidonota exigua*, p. 8, *socia*, *R. ? tibialis*, p. 9, Sokotra, GAHAN, Bull. Liverp. Mus. iii; *R. robusta*, Somaliland, GAHAN, p. 28, pl. i, fig. 13, P. Zool. Soc. London 1900, n. sp.
- Scotinesthes asperulus*, Madagascar, FAIRMAIRE, p. 245, Ann. Soc. ent. Belgique xlv, n. sp.
- Sepidium magnum*, pl. i, fig. 12, p. 29, *bilobatum*, fig. 14, p. 30, Somaliland, GAHAN, P. Zool. Soc. London 1900, n. spp.
- Setenis* Knoch = (*Pseudobates* Fairm.), *S. coracina* Knoch = (*Iphthimus cupripennis* Boh.), *S. fairmairei* n. n. for *coracina* Fairm., KOLBE, p. 74, Ent. Nachr. xxvi.
- Sphenaria reitteri*, Ashabad, BRANCSIK, p. 99, Jahresh. Ver. Trencsen. xxi, n. sp.
- Strongylium forcipicollis*, Borneo, FAIRMAIRE, p. 45, Bull. Soc. ent. France 1900, n. sp.
- Tagona longicollis*, Ashabad, BRANCSIK, p. 100, pl. iv, fig. 4, Jahresh. Ver. Trencsen. xxi, n. sp.
- Toxicum antilope*, Christmas Is., ARROW, p. 106, Monogr. Christmas Island, n. sp.
- Trachyscelis anisotomoides* Fairm. is a *Liodes*, BEDEL, p. 248, Bull. Soc. ent. France 1900.
- Trigonocnemis holdereri*, Centr. Asia, REITTER, p. 161, Wien. ent. Zeit. xix, n. sp.
- Zophosis undulata*, Sokotra, GAHAN, p. 8, Bull. Liverp. Mus. iii, n. sp.

## CISTELIDÆ.

- Bratyna apicalis* ♀, KRAATZ, p. 10, Deutsche ent. Zeitschr. 1900.
- Cistela kauaiensis*, pl. x, fig. 22, *nigricollis*, Kauai, p. 248, *subanescescens apicalis*, Oahu, *montana*, Kauai, p. 249, *konæ*, Hawaii, p. 250, PERKINS, Fauna Hawaiiensis ii, n. spp.
- Cistelomorpha nigrosparsa*, Yunnan, p. 630, *bina*, Formosa, *atripes*, p. 631, *infranigra*, p. 632, China, FAIRMAIRE, Ann. Soc. ent. France lxviii, n. spp.
- Cteniopus luteus* var. n. *obscurithorax*, PIC, p. 189, Act. Soc. Espan. 1900.
- Labetis hawaiiensis*, Hawaii, p. 250, *comitans*, Kauai, pl. x, fig. 21, p. 251, PERKINS, Fauna Hawaiiensis ii, n. spp.

## MELANDRYIDÆ.

[Cf. CASEY (229), FAIRMAIRE (390), SEMENOW (1196).]

*Abstrulia* n. g. *Tetratomini*, p. 168, for *tessellata* Melsh. and *variegata*, *maculata* n. spp., N. America, p. 169, CASEY, J. N. York Ent. Soc. viii.

*Eupisenus* n. g. *Tetratomini* for *Triphyllus elongatus* Lec., CASEY, p. 170, t. c.

*Incolia* n. g. *Tetratomini*, p. 169, for *I. longipennis* n. sp., N. America, p. 170, CASEY, t. c.

*Mystaxus relictus*, Buchara, SEMENOW, p. 685, Horæ Soc. ent. Ross. xxxiv, n. sp.

*Pisenus* n. g. *Tetratomini*, p. 171, for *humeralis* Kirby = (*Triphyllus ruficornis* Lec.), and *P. pubescens* n. sp., Virginia, p. 172, CASEY, J. N. York Ent. Soc. viii.

*Tolmerus* n. g. near *Melandrya*, p. 111, for *T. longipennis* n. sp., Patagonia, p. 112, FAIRMAIRE, Ann. Soc. ent. Belgique xlv.

## LAGRIIDÆ.

*Chlorophila carolina*, p. 632, *semenowi*, p. 633, China, FAIRMAIRE, Ann. Soc. ent. France lxxviii, n. spp.

*Entypodera impressithorax*, E. Africa, PIC, p. 34, Echange xvi, n. sp.

*Nemostira rugulicollis*, China, FAIRMAIRE, p. 633, Ann. Soc. ent. France 1900, n. sp.

## ANTHICIDÆ, PEDILIDÆ.

[Cf. PIC (1000-1005, 1014, 1017, 1021, 1022, 1024, 1026, 1031, 1035), SCHILSKY (1154), SEMENOW (1194-1196).]

*Anthicus amicitiae* and other species described by Dufour, synonymy, PIC, pp. 102, 103, Bull. Mus. Paris 1900; *A. floralis* var. n. *massauensis*, PIC, p. 574, Ann. Mus. Genova xl; *A. reitteri* var. n. *reductus*, BRANCSIK, p. 102, pl. iv, fig. 6, Jahresh. Ver. Trencsen. xxi; *A. betsi-bokensis* n. n. for *quadraticeps* Fairm. nec Desb., PIC, p. 289, Bull. Soc. ent. France 1900; *A. insignis* var. n. *tripolitanus*, PIC, p. 165, t. c.

*A. ferianensis*, Tunis, PIC, p. 56, Echange xvi; *A. densifer*, *anticemaculatus*, *subcrucifer*, Turkestan, *A. (Aulacoderus) peyroni*, Syria, PIC, p. 78, t. c.; *A. haasi*, p. 89, *arcuaticeps*, p. 90, Turkestan, PIC, t. c.; *A. opaciceps*, *tschoffeni*, Congo, PIC, p. 429, Ann. Soc. ent. Belgique xlv; *A. schmitti*, *morogorensis*, E. Africa, PIC, p. 36, Echange xvi; *A. bellii*, Erythraea, PIC, p. 574, Ann. Mus. Genova xl; *A. (Pseudoleptalcus) gibbipennis*, *A. papuus*, p. 603, *quadrinotatus*, *hirtipennis*, *submetallicus*, p. 604, *adonis*, *albertini*, p. 605, *loria*, *rugosicollis*, p. 606, *neoguineensis*, *dilensis*, *insulanus*, p. 607, *alfurus*, *dilatipennis*, p. 608, New Guinea, PIC, t. c.; *A. difformipes*, *brunneonotatus*, *diversiceps*, *diversipes*, Sumatra, PIC, p. 759, Ann. Soc. ent. France lxxviii; *A. (Pseudoleptalcus) bidentatus*, *collaris*, p. 797, *monstrosicollis*, Sumatra, *macassarensis*, *dilutus*, Celebes, p. 798, *A. sinuaticeps*, Mentawai, *puncticeps*, Celebes, p. 799, *insolitus*, Bali, *puncticollis*, *modiglianii*, *balighensis*, Sumatra, p. 800, *nigricolor*, Mentawai, p. 801, PIC, Ann. Mus. Genova xl; *A. inflatithorax*, p. 138, *A. (Ischyropalpus) venezuelensis*, Venezuela, *A. (Aulacoderus) ganglbaueri*, E. Africa, p. 139, PIC, Verh. Ges. Wien l : n. spp.

*Curtotomoderus* subg. n., see *Tomoderus*.

*Formicomus waelbroeckii*, Congo, PIC, p. 422



- F. schmitti, ganglbaueri*, E. Africa, PIC, p. 35, Echange xvi; *F. fieberi*, Tenasserim, PIC, p. 138, Verh. Ges. Wien I; *F. modiglianii, gibbithorax*, Mentawai, p. 794, *tibialis*, Java, *beccarii*, Celebes, *robustipes*, Mentawai, p. 795, *sumatrensis, siboganus*, p. 796, *atricolor*, Sumatra, p. 797, PIC, Ann. Mus. Genova xl : n. spp.
- Hylophilus atriceps* n. n. for *X. nigricollis* Champ., PIC, p. 231, Bull. Soc. ent. France 1900.
- H. macassarensis, beccarii*, Celebes, *latipennis*, p. 738, *modiglianii*, p. 739, *carinatus, gestroi, pallidicolor, diversipes, tibialis*, p. 740, Sumatra, PIC, Ann. Mus. Genova xl; *H. thesæ, longithorax*, p. 755, *nigrofasciatus, grandiceps, nigromaculatus, subsericeus*, p. 756, *donckieri, curtithorax*, p. 757, Sumatra, PIC, Ann. Soc. ent. France lxxviii; *H. peruvianus*, p. 19, *standingeri*, p. 20, Peru, PIC, Echange xvi, ? n. spp. : n. spp.
- Macratra helferi* var. n. *bimaculata*, PIC, p. 138, Verh. Ges. Wien I.
- M. severini*, Congo, PIC, p. 430, Ann. Soc. ent. Belgique xlv; *M. donckieri, limbata, rubrofasciata*, Sumatra, PIC, p. 760, Ann. Soc. ent. France lxxviii; *M. testaceicornis*, Celebes, p. 791, *doria, hirsuta*, Borneo, p. 792, PIC, Ann. Mus. Genova xl; *M. beccarii*, p. 597, *loriæ, coniceps, gestroi*, with var. *densata*, p. 598, *opacicolis, maculipennis*, p. 599, *albertisi, distincticornis, rubriceps*, p. 600, with var. *neoguineensis*, p. 601, New Guinea, PIC, t. c. : n. spp.
- Macrotomoderus* n. g. near *Cotes*, for *M. latipennis* n. sp., Sumatra, PIC, p. 741, t. c.
- Mecynotarsus ahngerii*, Transcaspian, SEMENOW, p. 598, Horæ Soc. ent. Ross. xxxiv; *M. sumatrensis*, Sumatra, PIC, p. 758, Ann. Soc. ent. France lxxviii; *M. loriæ*, New Guinea, PIC, p. 602, Ann. Mus. Genova xl : n. spp.
- Notoxus*, table of palæarctic, PIC (1035); *N. miles* var. n. *rubrithorax*, PIC, p. 161, BODEMEYER (131); *N. sectator* var. *obscuripennis*, PIC, p. 428, Ann. Soc. ent. Belgique xlv; *N. numidicus* var. *mauritii, N. mauritanicus* var. *lethierryi*, PIC, p. 32, Echange xvi.
- Pedilus tibialis* var. n. *pallidipes*, PIC, p. 10, Mt. Mus. Hamburg xvii, Beih. ii.
- P. subowskii*, Buchara, SEMENOW, p. 319, Horæ Soc. ent. Ross. xxxiv; *P. willbergi, polyzanthus*, Buchara, SEMENOW, p. 687, t. c. : n. spp.
- Pristocyphus maculipennis*, E. Africa, PIC, p. 34, Echange xvi, n. sp.
- Scraptia ertzeni*, Crète, SCHILSKY, Käf. Eur. xxxvii, 28, n. sp.
- Tomoderus tschofeni*, Congo, PIC, p. 428, Ann. Soc. ent. Belgique xlv; *T. rubrofasciatus*, E. Africa, PIC, p. 35, Echange xvi; *T. (Curtotomoderus* subg. n.), *brevipennis*, Sumatra, PIC, p. 89, t. c.; *T. (Sirambeus) depressipennis*, p. 801, *T. pallidus, modiglianii*, p. 802, *subcostulatus, gestroi*, p. 803, Sumatra, PIC, Ann. Mus. Genova xl; *T. plicicollis*, New Guinea, PIC, p. 603, t. c. : n. spp.

## RHIPIPHORIDÆ and MORDELLIDÆ.

- Evaniocera persimilis*, Victoria, BLACKBURN, p. 60, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Mordellistena oranensis*, Algeria, PIC, p. 124, Bull. Soc. ent. France 1900, n. sp.

## CANTHARIDÆ and CEPHALOIDÆ.

- [Cf. GANGLBAUER (131), REITTER (1099), SEMENOW (1199), THOMAS (983), XAMBEU (1420).]
- Cephaloidæ* a valid family near *Edemeridæ*, SEMENOW, p. 496, Horæ Soc. ent. Ross. xxxiv.

- Ctenopus sogdianus*, Turkestan, p. 486, *cons*, Chinese Turkestan, p. 487, SEMENOW, t. c. n. spp.  
*Ephamillus* subg. n. for *Cephaloon variabile* Motsch., SEMENOW, p. 495, t. c.  
*Glasunovia*, p. 488, and *G. caspica*, p. 489, characters, SEMENOW, t. c. n. spp.  
*Hapalus kraatzianus* n. n. for *apicalis* Kr., p. 490; *H. grandiceps*, p. 492, *fasciatus* Fald., p. 493, characters, SEMENOW, t. c.  
*Hapalus sokolowi*, Samarcand, SEMENOW, p. 491, t. c. n. sp.  
*Leonidia* n. n. for *Leonia* preoccupied, COCKERELL, p. 11, Psyche ix.  
*Lydus reitterianus* = (*Halosinus armeniacus* Reitt. nec. Fald.), SEMENOW, p. 481, Horæ Soc. ent. Ross. xxxiv, n. sp.  
*Meloe proscarabæus*, ♂ ♀ antennæ, structure and use, SCHOLZ, p. 217, Illustr. Zeitschr. Ent. v.  
*M. bodemeyeri*, Asia Minor, GANGLBAUER, p. 160, BODEMEYER (131); *M. nigropilosellus*, Bucharâ, REITTER, p. 56, Deutsche ent. Zeitschr. 1900 : n. spp.  
*Mylabris somalica*, Somaliland, THOMAS, p. 31, P. Zool. Soc. London 1900, n. sp.

## CÉDEMERIDÆ.

[Cf. ARROW (36), GANGLBAUER (131), SEMENOW (1198).]

- Enas coccinea* var. n. *fuscicrus*, BRANCSIK, p. 102, Jahresh. Ver. Trencsen. xxi.  
*Zonitis turkestanica*, Samarcand, p. 480, *kozłowi*, Chinese Turkestan, p. 482, SEMENOW, Horæ Soc. ent. Ross. xxxiv, n. spp.  
 SEMENOW discusses various genera in connection with the recent work of Seidlitz, t. c. pp. 643-655.  
 Omissions from Seidlitz' work, PIC, p. 112, Echange xvi.  
*Anisochroa* n. g., p. 652, near *Nacerdochroa*, for *A. zarudnyi* n. sp., Persia, p. 653, SEMENOW, Horæ Soc. ent. Ross. xxxiv.  
*Asclera bodemeyeri*, Asia Minor, GANGLBAUER, p. 161, Bodemeyer (131), n. sp.  
*Asclerella* n. g., p. 648, near *Zubkovia*, for *A. tenera* n. sp., Persia, p. 651, SEMENOW, Horæ Soc. ent. Ross. xxxiv.  
*Chrysanthia superba*, *reitteri*, *oranensis*, synonymy, REITTER, p. 13, Wien. ent. Zeit. xix; *C. superba*, synonymy, PIC, p. 91, Feuille Natural. xxx.  
*Eobia* and *Copidita* distinguished, SEMENOW, Horæ Soc. ent. Ross. xxxiv, p. 644.  
*Sessinia andrewsi*, p. 107, *listeri*, p. 108, Christmas Is., ARROW, Monogr. Christmas Island, n. spp.  
*Sparedrides*; validity of the tribe, SEMENOW, Horæ Soc. ent. Ross. xxxiv.  
*Xanthomima* n. g. for *Ananconia handlirschi* Seidl., SEMENOW, p. 646, t. c.

## CURCULIONIDÆ.

[Cf. ALLUAUD (22), BEDEL (88), BLACKBURN (123, 125), BORDAS (144), BRANCSIK (167), DESBROCHERS (314-316), FABRE (385), FAIRMAIRE (389), FAUST (574), GAHAN (478, 479), GERMAIN (491), HARTMANN (564, 565, 566), HELLER (573), KINCAID (711), KOLBE (752), KRAUSS (781), LEA (802, 803), NEEDHAM (936), PERKINS (990), PIC (1008, 1011, 1026, 1028, 1031, 1036), REITTER (1092, 1099, 1100, 1101), SCHULTZE (1167), STIERLIN (1284), XAMBEU (1420).]

Revision of Australian *Cryptorhynchides*, pt. iv, genera allied to *Psepholus*, LEA (802).

Stridulating organs, GAHAN (478).

Instinct and oviposition of numerous forms, *Larinides*, *Balaninides*, *Rhynchitides*, FABRE (385).

Metamorphosis of *Mononychus*, NEEDHAM (936).

*Acalles syriacus*, Lebanon, PIC, p. 79, Echange xvi; *A. humeralis*, Maui, *callichroma*, pl. vii, fig. 10, *melanolepis*, fig. 11, Hawaii, p. 132, *frater*, Maui, *koa*, Hawaii, p. 133, *innotabilis leptothorax*, fig. 12, Kauai, p. 134, *lanaiensis*, *nigripennis*, fig. 15, Lanai, *chlorolepis*, Kauai, p. 136, *tuberculatus*, Hawaii, *pallidicollis*, Kauai, p. 137, *monticola*, *oahuensis*, Oahu, p. 138, PERKINS, Fauna Hawaiiensis ii : n. spp.

*Acionemis andrewsi*, Christmas Is., GAHAN, p. 112, Monogr. Christmas Island; *A. figurata*, Bongu, HARTMANN, p. 281, Deutsche ent. Zeitschr. 1900 : n. spp.

*Acnemiscelis araneipes*, note on, MEIER, p. 219, Ent. Nachr. xxvi.

*Alaocyba theresae*, Tunis, PIC, p. 90, Echange xvi, n. sp.

*Alcides lobipennis*, China, FAIRMAIRE, p. 634, Ann. Soc. ent. France 1900; *A. ferrugineus*, p. 274, *bonguensis*, *frater*, p. 276, Bongu, HARTMANN, Deutsche ent. Zeitschr. 1900; *A. terræreginae*, Queensland, BLACKBURN, p. 141, Tr. R. Soc. S. Austral. xxiv : n. spp.

*Anchithyrus ornatus*, p. 40, *nebulosus*, *laticollis*, pl. fig. 19, p. 41, Celebes, HELLER, Abh. Mus. Dresden ix, No. 5, n. spp.

*Anotheorus robustus*, Kauai, pl. viii, fig. 27, PERKINS, p. 173, Fauna Hawaiiensis ii, n. sp.

*Atactoglymma* n. g. *Celeuthidarum*, for *A. spinipes* n. sp. Celebes, HELLER, p. 22, Abh. Mus. Dresden ix, No. 5.

*Balaninus tenuesparsus*, China, FAIRMAIRE, p. 635, Ann. Soc. ent. France lxviii, n. sp.

*Baridius* (*Baris*) *subanalis*, *B. libanicola*, Syria, PIC, p. 90, Echange xvi; *B. heydeni*, Caifa, *deflexus*, Greece, p. 41, *sareptanus*, Sarepta, p. 42, *ocellatus*, Piedmont, *propinquus*, Algeria, p. 43, DESBROCHERS, Frelon viii : n. spp.

*Baris holdereri*, Centr. Asia, REITTER, p. 163, Wien. ent. Zeit. xix; *B. orchivora*, Queensland, BLACKBURN, p. 61, Tr. R. Soc. S. Austral. xxiv : n. spp.

*Barypithes carpathicus* and *styriacus* distinguished, REITTER, p. 243, Wien. ent. Zeit. xix.

*Barystethus wahnesi*, New Guinea, HARTMANN, p. 294, Deutsche ent. Zeitschr. 1900, n. sp.

*Bonthaina* n. g. *Celeuthidarum*, p. 20, for *B. fausti*, *solitaria* n. spp., Celebes, p. 21, HELLER, Abh. Mus. Dresden ix, No. 5.

*Brachyaspistes tibialis*, pl. iv, figg. 5, 6, habits, p. 52, Ind. Mus. Notes v.

*Brachyderes tusitanicus*, early stages, XAMBEU, p. 8, Naturaliste xxii.

*Campторhinus crinipes*, Christmas Is., GAHAN, p. 112, Monogr. Christmas Island, n. sp.

*Catastygus limbifer*, Australia, FAUST, p. 626, Semon Forschungsreise v, n. sp.

*Cathormiocerus churchvillei*, France, DESBROCHERS, p. 44, Frelon viii; *C. alveolatus*, Tangier, DESBROCHERS, p. 15, t. c. : n. spp.

*Ceuthorrhynchus obsoletus* Germ.=(*dalmatinus* Stierl.), SCHULTZE, p. 48, Deutsche ent. Zeitschr. 1900.

*C. ruebsaameni*, Germany, KOLBE, p. 227, Ent. Nachr. xxvi; *C. poncyi*, Roumania, STIERLIN, p. 235, Mt. Schweiz ent. Ges. x; *C. (Nedys) dentatoserratus*, Alexander Mts., REITTER, p. 58, Deutsche ent. Zeitschr. 1900; *C. anatolicus*, p. 21, *brevirostris*, p. 22, Smyrna, *granulithorax*, Spain, Algeria, p. 23, *sericellus*, Syria, p. 25, *planidorsum*, p. 27, *curticornis*, p. 28, Algeria, *longipennis*, Tangasi, p. 30, *pinicillus*, Algeria, p. 31, *carinifrons*, p. 33, *forticornis*, p. 34, Syria, *striatellus*, Hungary, p. 36, *arduus*, Tangier, p. 37, *infernalis*, Syria,

- p. 38, *schusteri*, Vienna, p. 39, *damascenus*, Syria, p. 40, *melitensis*, Malta, p. 42, *longitarsis*, p. 43, *tataricus*, p. 44, Turkestan, *circassicus*, Circassia, p. 46, *tangerianus*, Tangier, p. 47, SCHULTZ, t. c. : n. spp.
- Conocetus cylindriothorax*, Rhodes, DESBROCHERS, p. 14, Frelon viii, n. sp.
- Coptorhynchus*; Celebes spp. tabulated and discussed, HELLER, pp. 23-27, Abh. Mus. Dresden ix, No. 5.
- C. narinorus*, p. 27, *brevicollis*, *globinasus*, p. 28, *lacerta*, *celeutheticus*, p. 29, *subacutus*, *amplus*, p. 30, *manadensis*, *sulcirostris*, p. 31, *roseipes*, *cyclophthalmus*, p. 32, *beryllinus*, *zygopsicus*, *sternalis*, p. 33, *longicollis*, *luhuanus*, p. 34, *lacophilus*, *amabilis*, p. 35, *heteroclavatus*, p. 36, Celebes, id. t. c. n. spp.
- Corigetus*, characters of Centr.-Asian, REITTER, pp. 62-68, Deutsche ent. Zeitschr. 1900.
- C. rufitarsis*, p. 63, *sieversi*, *excisangulus*, p. 65, Centr. Asia, REITTER, t. c. n. spp.
- Cossonus variipennis*, Christmas Is., GAHAN, p. 114, Monogr. Christmas Island, n. sp.
- Cryptoderma maximum* ♂, HELLER, p. 44, Abh. Mus. Dresden ix, No. 5.
- Cyamobolus obscurus*, p. 285, *scutellaris*, p. 286, Bongu, HARTMANN, Deutsche ent. Zeitschr. 1900, n. spp.
- Cylindrocapturus* H. (= *Copturodes* Casey), HELLER, p. 64, Ent. Nachr. xxvi.
- Cyrtotrachelus areolatus*, China, FAIRMAIRE, p. 636, Ann. Soc. ent. France lxxviii, n. sp.
- Degis politus*, New Guinea, HARTMANN, p. 287, Deutsche ent. Zeitschr. 1900, n. sp.
- Deinocossonus* n. g., p. 147, *Cossonides*, isolated, for *D. nesiotis* n. sp., Hawaiian Ida., pl. viii, fig. 3, p. 148, PERKINS, Fauna Hawaiensis ii.
- Deminea strumosa*, Celebes, HELLER, p. 36, Abh. Mus. Dresden ix, No. 5, n. sp.
- Derbyia* n. g. near *Tranes*, p. 543, for *D. laminatus* n. sp., N.W. Australia, p. 544, LEA, P. Linn. Soc. N. S. Wales xxiv.
- Deniantha caudata*, pl. fig. 4, p. 645, FROGGATT, Agric. Gaz. N. S. Wales.
- Dryophthorus assimilis*, Christmas Is., GAHAN, p. 116, Monogr. Christmas Island; *D. distinguendus*, Hawaiian Ida., *peles*, Hawaii, p. 140, *nesiotis*, pl. vii, fig. 16, p. 141, *homocorhynchus*, fig. 17, p. 142, Kauai, *oahuensis*, Oahu, *kauaiensis*, p. 143, *insignoides*, *brevipennis*, p. 144, *fuscescens*, *verticalis*, fig. 20, p. 145, Kauai, PERKINS, Fauna Hawaiensis ii : n. spp.
- Dysomma* n. g., p. 151, *Cossonides*, for *D. sylvicola* n. sp., Kauai, pl. viii, fig. 6, p. 152, PERKINS, t. c.
- Dyspeithes pascoci*, Bongu, HARTMANN, p. 287, Deutsche ent. Zeitschr. 1900, n. sp.
- Echinocnemis subaureus*, Transcaspien, REITTER, p. 58, t. c. n. sp.
- Ectemnomerus durianus*, Celebes, HELLER, p. 15, Abh. Mus. Dresden ix, No. 5, n. sp.
- Elytrodon luigionii*, Italy, DESBROCHERS, Frelon viii, p. 1, n. sp.
- Episomus fausti*, p. 175, *lucidus*, p. 176, Sumatra, HARTMANN, Wien. ent. Zeit. xix, n. spp.
- Ethemaia sellata*, pl. fig. 3, larva, p. 643, FROGGATT, Agric. Gaz. N. S. Wales xi.
- Exochus gigas*, characters, BOURGEOIS, p. 247, Bull. Soc. ent. France 1900.
- Gymnetron tibiellum*, Sardinia, DESBROCHERS, p. 16, Frelon viii; *G. laterufum*, p. 79, *logesi*, p. 80, Tunis, Pic, Echange xvi : n. spp.
- Halorhynchus geniculatus*, W. Australia, LEA, p. 391, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Haloxenus* n. g. *Cossonides* near *Eutornus*, p. 148, for *H. immigrans* n. sp. Hawaiian Ida., pl. viii, fig. 4, p. 149, PERKINS, Fauna Hawaiensis.



- Heteramphus filicum*, Oahu, pl. viii, fig. 7, p. 152, *haleakalæ, frater*, Maui, *molokaiensis*, Molokai, p. 153, *kauaiensis*, Kauai, pl. viii, fig. 11, *nivicola*, Maui, p. 154, PERKINS, t. c. n. spp.
- Heteroglymma klabatica*, p. 16, with var. *soputana*, p. 17, *albicans*, p. 17, pl., fig. 24, *cimex*, fig. 13, *sudara*, p. 18, Celebes, *bispinosa*, Sangi, p. 19, *echinata*, Lombok, *alata*, Philippines, p. 20, HELLER, Abh. Mus. Dresden ix, No. 5, n. spp.
- Hybomorphus melanosomus*, note on, LEA, p. 529, P. Linn. Soc. N. S. Wales xxiv.
- Hylobius longulus*, China, FAIRMAIRE, p. 633, Ann. Soc. ent. France lxxviii, n. sp.
- Hypera*: the species of *Donus*, KRAUSS, pp. 189-205, Wien. ent. Zeit. xix.
- H. rubi*, E. Europe, KRAUSS, p. 189, t. c.; *H. corrossa*, Portugal, DESBROCHERS, Frelon viii, p. 2 : n. spp.
- Hypurus podagricus*, Algeria, SCHULTZE, p. 18, Deutsche ent. Zeitschr. 1900; *H. optimemaculatus*, Tunis, PIC, p. 70, Echange xvi : n. spp.
- Lepidophorus lineaticollis*, early stages, KINCAID, p. 379, pl. xvi, figg. 8-12, P. Washington Ac. ii.
- Listroderes*: numerous n. spp. from Chili, GERMAIN (491): see also *Puranius*.
- Lixus guttulatus*, Akbès, p. 10, *impar*, Jericho, p. 11, DESBROCHERS, Frelon viii; *L. sulphureovittis*, Ashabad, BRANCISK, p. 102, pl. iv, fig. 7, Jahresh. Ver. Trencsen. xxi; *L. bonguensis*, Bongu, HARTMANN, p. 273, Deutsche ent. Zeitschr. 1900 : n. spp.
- Lostianus* n. g. near *Notaris*, p. 9, for *L. sardous* n. sp., Sardinia, p. 10, DESBROCHERS, Frelon viii.
- Magdalis ænescens*, habits, metamorphosis, CHITTENDEN, Bull. Dep. Agric. Ent. xxii, pp. 37-44.
- Mecocorynus tuberosus*, China, FAIRMAIRE, p. 634, Ann. Soc. ent. France lxxviii, n. sp.
- Menechirus* n. g. *Megarrhininorum*, p. 278, for *M. oculatus* n. sp., Bongu, p. 279, HARTMANN, Deutsche ent. Zeitschr. 1900.
- Melanterius*; amended table of species, LEA, pp. 545, 546, P. Linn. Soc. N. S. Wales xxiv.
- Mesites angustior*, Rhodes, PIC, p. 91, Echange xvi, n. sp.
- Miccotrogus lostiæ*, Sardinia, DESBROCHERS, Frelon viii, p. 1, n. sp.
- Mylocerus*; characters of Centr. Asian, synonymy, REITTER, pp. 60, 61, Deutsche ent. Zeitschr. 1900.
- Nanophyes telephii*, France, BEDEL, p. 304, Bull. Soc. ent. France 1900; *N. ægyptiacus*, Fayoum, *palestinus*, Jericho, PIC, Frelon viii, sep. pag. p. 7 : n. spp.
- Nea* n. g. *Calandridarum* near *Aplotes*, for *N. princeps* n. sp., Celebes, pl., fig. 18, HELLER, p. 42, Abh. Mus. Dresden ix, No. 5.
- Neliocarus marmoratus*, Spain, STIERLIN, p. 235, Mt. Schweiz ent. Ges. x, n. sp.
- Neomerimnetes* n. g., p. 226, for *N. destructor* n. sp., S. Australia, p. 227, BLACKBURN, P. Soc. Victoria xii.
- Neoseneudes* n. g. near *Oreda*, p. 532, for *N. dives*, p. 533, n. sp., New South Wales, LEA, P. Linn. Soc. N. S. Wales xxiv.
- Nesotocus* n. g. *Cossonides* isolated, for *N. munroi*, p. 150, *newelli*, *kauaiensis*, pl. viii, fig. 5, p. 151, n. spp., Hawaiian Ids., PERKINS, Fauna Hawaiianensis ii.
- Ocladius abyssinicus*, Abyssinia, PIC, p. 108, Bull. Soc. ent. France 1900; *O. alluaudi*, Madagascar, FAIRMAIRE, p. 21, t. c. : n. spp.
- Oodemas longirostre*, Kauai, pl. viii, fig. 13, p. 155, *dilatatus*, Oahu, p. 156, *costatum*, *longicorne*, Kauai, *punctulatum*, Oahu, p. 157, *molokaiense*, Molokai, fig. 14, *chrysodorum*, Maui, fig. 15, p. 158, *brunneum*, Molokai, *cupreum*, p. 159, *haleakalæ*, Maui, *montanum*, p. 160, *apio-*

- noides*, p. 161, *affine*, Kauai, *parallelum*, Oahu, p. 162, *graciliforme*, Kauai, fig. 16, *ramulorum*, Oahu, p. 163, *leiothorax*, fig. 17, *flexirostre*, *dubiosum*, p. 164, *striatum*, fig. 26, *puncticollis*, p. 165, *purpurascens*, *pulchrum*, fig. 18, p. 166, *oblongum*, fig. 19, *grande*, fig. 20, p. 167, Kauai, *corticis*, Lanai etc., fig. 21, *pachysoma*, fig. 22, p. 168, *æolosoma*, p. 169, Kauai, *nitidissimum*, Oahu, p. 170, *konanum*, *multiforme*, p. 171, Hawaii, PERKINS, Fauna Hawaiianensis ii : n. spp.
- Oreda dubia*, N. S. Wales, LEA, p. 540, P. Linn. Soc. N. S. Wales xxiv, n. sp.
- Orothreptes* n. g. *Cossonides* near *Sericotrogus*, for *O. callithrix* n. sp., Hawaii, pl. viii, fig. 2, PERKINS, p. 147, Fauna Hawaiianensis ii.
- Orthorrhinus cylindrirostris*, habits, injuries, FROGGATT, pp. 847-851, Agric. Gaz. N. S. W. xi.
- Otidognathus forsteri*, p. 290, *purpuratus*, p. 291, *rufescens*, p. 292, *papuanus*, *velutinus*, p. 293, New Guinea, HARTMANN, Deutsche ent. Zeitschr. 1900, n. spp.
- Otiorrhynchus tenuicornis* var. n. *rhodopus*, KRAUSS, p. 241, Wien. ent. Zeit. xix.
- O. (Arammichnus) vaulogeri*, N. Africa, PIC, p. 316, Bull. Soc. ent. France 1900; *O. (Arammichnus) marquardtianus*, *vexator*, Caucasus, REITTER, p. 57, Deutsche ent. Zeitschr. 1900 : n. spp.
- Oxyonyx pici*, Jaffa, SCHULTZE, p. 17, t. c. n. sp.
- Oxyopisthen kolbei*, Congo, HARTMANN, p. 123, Wien. ent. Zeit. xix.
- Pachyonyx lineatus*, Bongu, HARTMANN, p. 283, Deutsche ent. Zeitschr. 1900, n. sp.
- Pachyops*? *incertus*, Christmas Is., GAHAN, p. 115, Monogr. Christmas Island, n. sp.
- Pachytychius tychioides*, Jerusalem, DESBROCHERS, p. 12, Frelon viii, n. sp.
- Pantomorus olinder*, Hawaiian Is., PERKINS, p. 130, Fauna Hawaiianensis ii, n. sp.
- Parimera vitticollis*, Celebes, HELLER, p. 37, pl., fig. 14, Abh. Mus. Dresden ix, No. 5, n. sp.
- Perrhabius fasciculatus*, Bongu, HARTMANN, p. 282, Deutsche ent. Zeitschr. 1900, n. sp.
- Phlæphagosoma dubium*, Christmas Is., GAHAN, p. 114, Monogr. Christmas Is., n. sp.
- Photicodes subquadraticollis*, Rhodes, DESBROCHERS, p. 12, Frelon viii, n. sp.
- Phyllobius crassior*, Malta, DESBROCHERS, t. c. p. 3, n. sp.
- Phytonomus subcordicollis*, Tangier, DESBROCHERS, Frelon l. c. n. sp.
- Piezonotus*, cf. *Rhyncholobus*.
- Plinthus (Meleus) ronchetti*, Lombardy, REITTER, p. 87, Deutsche ent. Zeitschr. 1900, n. sp.
- Prodiocetes similis*, Celebes, HELLER, p. 43, pl., fig. 20, Abh. Mus. Dresden ix, No. 5, n. sp.
- Prostyleus comosus*, pl., fig. 2, FROGGATT, p. 644, Agric. Gaz. N. S. W. xi.
- Psepholacipus* n. g. near *Oreda*, p. 541, for *P. fossilis*, *Minor*, n. spp., Australia, p. 542, LEA, P. Linn. Soc. N. S. Wales xxiv.
- Psepholax leoninus*, p. 525, *humeralis*, p. 527, Australia, LEA, t. c. n. spp.
- Pseudolus hospes*, Oahu, PERKINS, p. 149, Fauna Hawaiianensis ii, n. sp.
- Pseudoporopterus minahassus*, pl., fig. 15, *impius*, fig. 16, Celebes, HELLER, p. 38, Abh. Mus. Dresden ix, No. 5, n. spp.
- Pseudotherebus* n. g. near *Therebus*, p. 536, for *P. sculptipennis* n. sp., Queensland, p. 537, LEA, P. Linn. Soc. N. S. Wales xxiv.
- Puranius* n. g. near *Listroderes*, p. 745, for *P. australia*, p. 747, *tuberosus*, p. 749, *inequalis*, p. 751, n. spp., Chili, GERMAIN, An. Univ. Chile xcv.
- Rhabdocnemis fausti*, Christmas Is., GAHAN, p. 113, Monogr. Christmas Island, n. sp.

- Rhinocyllus turkestanicus*, Russian Turkestan, DESBROCHERS, Frelon viii, p. 4, n. sp.
- Rhinoncus bosnicus*, Bosnia, SCHULTZE, p. 20, Deutsche ent. Zeitschr. 1900, n. sp.
- Rhinoscapha perfecta*, p. 624, *litoralis*, p. 625, New Guinea, FAUST, Semon Forschungsreisen v, n. spp.
- Rhynchites impressus*, China, FAIRMAIRE, p. 636, Ann. Soc. ent. France lxxviii, n. sp.
- Rhyncogonus nitidus*, Kauai, pl. vii, fig. 1, p. 122, *funereus*, Oahu, *squamiger*, pl. vii, fig. 2, p. 123, *stygius*, fig. 3, *minor*, Kauai, p. 124, *molokaiensis*, *dubius*, Molokai, p. 125, *freycinetiae*, fig. 4, *koebelezi*, fig. 5, p. 126, *kauaiensis*, Kauai, *sordidus*, p. 127, *lanaiensis*, Lanai, *lahaina*, Maui, *depressus*, fig. 6, p. 128, *vittatus*, fig. 7, *tuberculatus*, p. 129, *sylvicola*, p. 130, Kauai, PERKINS, Fauna Hawaiianensis ii, n. spp.
- Rhyncholobus* n. g. *Otiorhynchidae*, p. 108, for *R. rossi*, p. 109, pl. xi, figg. 7, 8, *vittatus*, p. 110, fig. 6, *andrewsi*, p. 111, n. spp., Christmas Is. and *Piezonotus discoidalis* Wat., GAHAN, Monogr. Christmas Island.
- Rhytirhinus pici*, Jericho, DESBROCHERS, p. 14, Frelon viii, n. sp.
- Scoliopisthen* n. g. *Oxyopisthini*, p. 121, for *S. sordidum* n. sp., Congo, p. 122, HARTMANN, Wien. ent. Zeit. xix.
- Sitones horrens*, Akbès, *assimilis*, Tangier, p. 5, *persulcatus*, Sardinia, p. 6, *staudingeri*, Oural, *stricticollis*, Italy, p. 7, *curviscelis*, Italy, p. 8, DESBROCHERS, Frelon viii, n. spp.
- Styphlus porosus*, Broussa, DESBROCHERS, p. 13, t. c. n. sp.
- Tapinelytrum* n. g. *Tylodini*, p. 39, for *T. mirabile* n. sp., Celebes, p. 40, pl., fig. 17, HELLER, Abh. Mus. Dresden ix, No. 5.
- Tasmanica* n. g. *Coasonides*, p. 392, for *T. myrmecophila* n. sp., Hobart, p. 393, LEA, P. Linn. Soc. N. S. Wales xxv.
- Thalattodora* n. g. *Coasonides*, for *T. insignis* n. sp., Lanai, pl. viii, fig. 1, PERKINS, p. 146, Fauna Hawaiianensis ii.
- Thaumastochirus* n. n. for *Thaumastopus* Hart. 1899, HARTMANN, p. 296, Deutsche ent. Zeitschr. 1900.
- Therebiosa* n. g. near *Therebus*, for *T. rhinarioides* n. sp., New South Wales, LEA, p. 538, P. Linn. Soc. N. S. Wales xxiv.
- Thylacites proximus*, Tunis, DESBROCHERS, p. 8, Frelon viii, n. sp.
- Trachypheus scaber*, metamorphosis, XAMBEU, p. 94, Naturaliste xxii.
- Tragopus longicollis*, Celebes, HELLER, p. 39, Abh. Mus. Dresden ix, No. 5, n. sp.
- Trochorhopalus corpulentus*, Celebes, HELLER, p. 43, t. c. n. sp.
- Tychius argentatus*, galls, STEFANI, p. 66, Boll. Nat. xx.

## SCOLYTIDÆ.

[Cf. BARGMANN (68), BELLEVOYE (91), CECCONI (231), GAHAN (478), HOPKINS (599), KNOTEK (737), PERKINS (990), REITTER (1099), ZEHNTNER (1423).]

Stridulating organs, GAHAN (478).

Habits of various *Scolytidae* in East Europe, KNOTEK (737).

Annual generations of *Hylesinus* and *Tomicus*, BARGMANN, Illustr. Zeitschr. Ent. v, p. 169.

American fossil tertiary *Coleoptera* of the family *Scolytidae*, HOPKINS (599).

*Hylastes trifolii*, ravages, metamorphosis, tunnels, CECCONI (231).

*Hylastes imitator*, Chabarowka, REITTER, p. 59, Deutsche ent. Zeitschr. 1900, n. sp.

*Hypothenemus sylvicola*, Lanai, *insularis*, Kauai, *ruficeps*, Oahu, p. 181, PERKINS, Fauna Hawaiianensis ii, n. spp.

*Scolytus rugulosus*, in *Prunus lauro-cerasus*, CHAPMAN, p. 77, Ent. Rec. xii.

- Tomicus typographus*, *piceæ* etc., habits, BARMANN (68).  
*Xyleborus dispar*, *saxseui*, habits, oviposition, proportions of sexes, BELLEVOYE (91); *X. perforans*, natural history, ZEHNTNER (1423); *X. solidus* in Australia, FROGGATT, pp. 640-642, Agric. Gaz. N. S. W. xi.  
*X. molokaiensis*, Molokai, *kauaiensis*, Kauai, p. 174, *mauiensis*, Maui, *hawaiiensis*, Hawaii, p. 175, *lanaiensis*, Lanai, *simillimus*, Hawaii, p. 176, *oahuensis*, Oahu, *dubiosus*, Maui, p. 177, *agamus*, Lanai, p. 178, *ersectus*, Maui, *vulcanus*, Hawaii, *littoralis*, Molokai, p. 179, *ignobilis*, Hawaii, p. 180, PERKINS, Fauna Hawaiiensis ii, n. spp.

## BRENTHIDÆ.

[Cf. GAHAN (479), SHARP (1208).]

- Cacochirus* n. g. *Ceocephalides*, for *Schizotrachelus schmeltzii* Fairm., SHARP, p. 386, pl. xxxv, fig. 7, WILLEY Results iv.  
*Cacotrachelus* n. g. *Eutrachelides*, p. 386, for *C. sculptipennis*, New Britain, pl. xxxv, figg. 8, 8a, *javanus*, Java, p. 387, n. spp., SHARP, t. c.  
*Ithystenus debilis*, New Britain, SHARP, p. 387, pl. xxxv, fig. 9, t. c. n. sp.  
*Orychodes andrewsi*, Christmas Is., GAHAN, p. 117, Monogr. Christmas Island, n. sp.

## ANTHRIBIDÆ.

[Cf. ALLUAUD (23), BLACKBURN (124), GAHAN (479), PERKINS (990), PIC (1032).]

- Revision of Australian, with tabulation of genera, BLACKBURN, pp. 141-167, Tr. R. Soc. S. Austral. xxiv.  
*Apatenia apicalis*, Christmas Is., GAHAN, p. 119, Monogr. Christmas Island, n. sp.  
*Aræoceroles* n. g. for *A. lilliputanus* n. sp., Queensland, BLACKBURN, p. 167, Tr. R. Soc. S. Austral. xxiv, n. sp.  
*Aræocerus sambucinus* Boisd. redescribed, BLACKBURN, p. 165, t. c.  
*A. bicristatus*, p. 163, *kabelei*, p. 164, *lindensis*, p. 165, *asperulus*, p. 166, Australia, BLACKBURN, t. c.; *A. constans*, Hawaii, PERKINS, p. 182, Fauna Hawaiiensis ii : n. spp.  
*Basitropis relicta*, p. 154, *pallida*, p. 156, Northern Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxiv, n. spp.  
*Cæcephatus* n. g. near *Apatenia*, for *C. sericeus* n. sp., Australia, BLACKBURN, p. 151, t. c.  
*Doticus æqualipennis*, Queensland, BLACKBURN, p. 162, t. c. n. sp.  
*Enspondus* n. g., *Tropiderides*, p. 148, for *E. bigibbosus* n. sp., S. Australia, p. 149, BLACKBURN, t. c.  
*Epargemus* n. g., p. 146, *Tropiderides* or *Phlæophilides*, for *E. marmoratus* n. sp., Victoria, p. 147, BLACKBURN, t. c.  
*Eucorynus mastersi*, Queensland, BLACKBURN, p. 144, t. c. n. sp.  
*Eutromus* n. g., ?near *Tropideres*, p. 145, for *E. dorsoplagiatus* n. sp., Victoria, BLACKBURN, p. 146, t. c.  
*Litocerus jordani*, Christmas Is., GAHAN, p. 118, Monogr. Christmas Island, n. sp.  
*Metadoticus* not distinct from *Doticus*, BLACKBURN, p. 161, Tr. R. Soc. S. Austral. xxiv.  
*Misthosima dorsonotata*, Queensland, BLACKBURN, p. 161, t. c. n. sp.  
*Notæcia* n. g. *Anthribides* vrais, p. 159, for *N. reticulata* n. sp., Australia, p. 160, BLACKBURN, t. c.  
*Streneoderma* n. g. *Anthribides* vrais, for *S. planatum*, p. 157, *contemptum*, p. 158, n. spp., Australia, BLACKBURN, t. c.



- Tophoderes murinus*, Madagascar, ALLUAUD, p. 366, Bull. Mus. Paris 1899, n. sp.  
*Tropideres*? *evanescens*, S. Australia, BLACKBURN, p. 150, Tr. R. Soc. S. Austral. xxiv, n. sp.  
*Urodon vestitus* var. n. *rufobrunneus*, PIC, p. 10, Mt. Mus. Hamburg xvii, Beih. ii.  
*U. kraepelini*, S. Africa, PIC, p. 9, t. c. n. sp.  
*Xenocerus nativitatis*, Christmas Is., GAHAN, p. 118, Monogr. Christmas Island, n. sp.  
*Xynotropis* n. g. *Tropiderides*, for *X. micans* n. sp., Tasmania, BLACKBURN, p. 152, Tr. R. Soc. S. Austral. xxiv.

## PROTERHINIDÆ.

*Proterhinus*; PERKINS describes 122 species of this genus, and figures many of them, from the Hawaiian Islands: most of the species are new, but as the family does not occur outside the islands it seems unnecessary to mention the n. spp. individually: Fauna Hawaiiensis ii, pp. 183-246, pls. ix, x.

## CERAMBYCIDÆ.

- [Cf. ALLUAUD (22, 23), AURIVILLIUS (44), BEDEL (89), BLACKBURN (125), BOAS (130), BRANCSIK (167), CECCONI (232), CHOBOUT (245), ESCALERA (381), FAIRMAIRE (389, 394, 395), GAHAN (478-482, 983), GANGLBAUER (485), HELLER (573), JAKOWLEFF (654, 655, 657), KINCAID (711), KOLBE (750), LAMEERE (795), MOKRZECKI (916), PIC (999, 1013, 1015, 1021, 1029, 1034), REITTER (1093), SEMENOW (1194, 1200), SEURAT (1202, 1203), SHARP (1208, 1209), WATERHOUSE (1384), XAMBEU (1420).]

XAMBEU continues his descriptions of larvæ of European Longicornia, pp. 109-156 sep. pag. in connection with Echange xvi.

The *Cerambycidæ* of the Hawaiian Islands, SHARP (1209).

Habits and larvæ of Longicorns attacking oaks in Tunis, SEURAT (1202).

Male genitalia, SEURAT (1203).

In reference to PIC's work (999) we must point out that it is so badly edited that it is very difficult to deal with it. REITTER says that it has not been properly published.

*Acanthocinus (Astynomus) henschi*, Bosnia, REITTER, p. 177, Wien. ent. Zeit. xix, n. sp.

*Acmeops*; cf. *Pseudodinoptera*.

*Adetus subcostatus, nigricornis*, p. 412, *fuscopunctatus*, p. 413, Venezuela, AURIVILLIUS, Ofv. Ak. Forh. lvii, n. spp.

*Egocidnus exiguus*, Christmas Is., GAHAN, p. 124, pl. xi, fig. 4, Monogr. Christmas Island, n. sp.

*Egosoma mandibulare*, China, FAIRMAIRE, p. 637, Ann. Soc. ent. France lxxiii; *Æ. hainanensis*, Hainan, GAHAN, p. 347, Ann. Nat. Hist. ii : n. spp.

*Agapanthia (Agapanthiola subg. n.)*, *A. euterpe* n. sp., Irkutsk, GANGLBAUER, p. 139, Verh. Ges. Wien I; *A. transcaspica*, Askhabad, PIC (999), p. 14, n. sp.?; *A. melanolopha*, China, FAIRMAIRE, p. 643, Ann. Soc. ent. France lxxiii : n. spp.

*Agapanthiola subg. n.*, cf. *Agapanthia*.

*Aldicion griseum*, Venezuela, AURIVILLIUS, p. 417, Ofv. Ak. Forh. lvii, n. sp.

*Alphitopola peeli*, Somaliland, GAHAN, p. 32, P. Zool. Soc. London 1900, n. sp.

- Amphionycha phæbina*, p. 418, *meinerti*, *niveiceps*, *grisea*, p. 419, *stephanus*, p. 420, Venezuela, AURIVILLIUS, Ofv. Ak. Forh. lvii, n. spp.
- Anoplostethus pauli* and *jardinei* referred to *Calothryza*, GAHAN, p. 33, P. Zool. Soc. London 1900.
- Aparecus* n. g. *Apomecynini*, for *A. præcox* n. sp., E. Africa, KOLBE, Berlin. ent. Zeitschr. xlv.
- Aphrodisium latouchei*, note on, FAIRMAIRE, p. 642, Ann. Soc. ent. France lxxiii.
- Apomecyna nigratarsis*, Christmas Is., GAHAN, p. 123, Monogr. Christmas Island, n. sp.
- Archidice carolina*, China, FAIRMAIRE, p. 641, Ann. Soc. ent. France lxxiii, n. sp.
- Arrhenotus willeyi*, New Britain, SHARP, p. 383, pl. xxxv, fig. 5, Willey Results iv, n. sp.
- Aspurgus* n. g. near *Nicarete*, for *A. cinerarius* n. sp., Madagascar, FAIRMAIRE, p. 136, Bull. Soc. ent. France 1900.
- Astathes cyanoptera*, Hainan, GAHAN, p. 353, Ann. Nat. Hist. v, n. sp.
- Astrimus hirtus* Fairm. = (*obscurus* Sharp), SHARP, p. 96, Fauna Hawaiensis ii.
- Batocera lactiflua*, colour var., SHARP, p. 385, Willey Results iv.
- Brachyhammus* n. g. *Monohammini*, p. 304, for *B. granulatus* n. sp., E. Africa, pl. iv, fig. 4, p. 305, KOLBE, Berlin. ent. Zeitschr. xlv.
- Brachyta variabilis*, varr., PIC, p. 82, Echange xvi.
- Cacia triangulifera*, Celebes, HELLER, p. 44, pl., fig. 11, Abh. Mus. Dresden ix, No. 5, n. sp.
- Cænoptera marmottani*, female, MAYET, p. 226, Bull. Soc. ent. France 1900; note, FAUVEL, p. 382, and PIC, p. 300, t. c.
- Callidium villosulum*, China, FAIRMAIRE, p. 639, Ann. Soc. ent. France lxxiii; *C. sinense*, Shang-hai, PIC, p. 17, Bull. Soc. ent. Belgique xlv : n. spp.
- Callipogon* (*Eoxenus*) *relictus*, characters (in Russian, with brief Latin note), SEMENOW, pp. 300-302, Horæ Soc. ent. Ross. xxxiv.
- Ceresium quadrimaculatum*, Christmas Is., GAHAN, p. 121, Monogr. Christmas Island, n. sp.
- Chlorida festiva* in Africa, VETH, p. 311, Tijdschr. Ent. xliii.
- Cleroclytus semenowi*, Bucharâ, *strigicollis*, Kuldja, p. 663, *manifestus*, Turkestan, *vestitus*, Ferghana, p. 664, *gracilis*, Zeravschan, p. 665, JAKOWLEFF, Horæ Soc. ent. Ross. xxxiv, n. spp.
- Clytartus mediocris*, Maui, *debilis*, Hawaii, p. 99, *obscurus*, Kauai, p. 100, *claviger*, Hawaii, *laticollis*, Maui, p. 101, *abnormis*, *nodifer*, Hawaii, p. 102, *longipes*, p. 103, *annectens*, p. 104, Kauai, SHARP, Fauna Hawaiensis ii, n. spp.
- Clytus lama* var. n. *vesubiensis*, PIC, p. 110, Bull. Soc. ent. France 1900; *C. (Sphegestes)*, table of species, PIC (999), pp. 8-10.
- C. (Clytanthus) theryi*, China, PIC, p. 19, Ann. Soc. ent. Belgique xlv, n. sp.
- Conizonia vittithorax*, Barbary, PIC (999), p. 16, n. sp.?
- Craspedocerus* n. g. *Ptericoptidæ*, p. 413, for *C. pæcilus* n. sp., Venezuela, p. 414, AURIVILLIUS, Ofv. Ak. Forh. lvii.
- Crossotus bifasciatus*, E. Africa, KOLBE, p. 307, Berlin. ent. Zeitschr. xlv, n. sp.
- Cyrtognathus breviceps*, Formosa, FAIRMAIRE, p. 637, Ann. Soc. ent. France lxxiii, n. sp.
- Damiria* n. g. near *Listroptera*, for *D. perrieri* n. sp., Madagascar, FAIRMAIRE, p. 89, Bull. Soc. ent. France 1900.
- Dicelosternus* n. g., p. 308, *Stenaspides*, for *D. corallinus* n. sp., Formosa, p. 309, GAHAN, Ann. Nat. Hist. v.
- Dorcadion bolivari* var. n. *rustipes*, ESCALERA, p. 228, Act. Soc. I

- 1900; *D. sericatum* var. n. *atripes*, REITTER, p. 88, Deutsche ent. Zeitschr. 1900; *D. equestre* varr. n. *niveconjunctum*, *romaniense*, PIC, p. 352, Ent. Nachr. xxvi; *D. globithorax* var. ? *staudingeri*, PIC, p. 29, Echange xvi; *Dorcadion* spp. or varr. described, PIC (1909), pp. 12-14; *D. staudingeri*, name changed to *alexandris*, PIC, p. 56, t. c.
- D. rosti*, Caucasus, PIC, p. 82, t. c. ? n. sp.; *D. lesnei*, p. 233, *navasi*, p. 234, *ferdinandi*, p. 235, *laufferi*, p. 236, *marmottani*, p. 237, *steparius*, p. 239, *griseus*, p. 240, Spain, ESCALERA, Act. Soc. Espan. 1900; *D. ciscaucasicum*, Stavropol, p. 59, *apicipenne*, Kuldja, p. 61, *hyrcanum*, N. Persia, p. 64, *bisignatum*, Transcaucasus, p. 66, *D. (Compsodorcadion) phenax*, W. Siberia, p. 68, JAKOWLEFF, Horæ Soc. ent. Ross. xxxiv; *D. (Compsodorcadion) pantherinum*, Kirghiz Steppes, p. 147, *sokolowi*, Semipalatinsk, p. 151, *tshitscherini*, Semiretchié, p. 153, JAKOWLEFF, op. cit. xxxiii : n. spp.
- Ergates akbesianus*, Syria, PIC, p. 81, Echange xvi, n. sp.
- Eugoa ruficrus* Gerst., pl. iv, fig. 3, p. 301, KOLBE, Berlin. ent. Zeitschr. xlv.
- Eustathes flava* var. n. *femoralis*, HELLER, p. 46, Abh. Mus. Dresden lx, No. 5.
- Exanthes philippensis* Newm. = (*longicornis* Pasc. = *idoneus* Pasc.), GAHAN, p. 122, Monogr. Christmas Island.
- E. affinis*, Christmas Is., GAHAN, p. 122, t. c. n. sp.
- Glenea extrema*, New Britain, SHARP, p. 385, Willey Results iv, n. sp.
- Gnatholeptanthes* n. g. *Hesperophanina*, for *G. octosignatus* n. sp., E. Africa, pl. iv, fig. 2, KOLBE, p. 301, Berlin. ent. Zeitschr. xlv.
- Gnomidolon meinerti*, Venezuela, AURIVILLIUS, p. 410, Ofv. Ak. Forh. lvii, n. sp.
- Grammopsis* n. g. for *Hippopsis clavigera* Bates, and *G. minima* n. sp., Venezuela, AURIVILLIUS, p. 416, t. c.
- Hippopsis meinerti*, Venezuela, AURIVILLIUS, p. 416, t. c. n. sp.
- Homemota letabilis*, Victoria, BLACKBURN, p. 232, P. Soc. Victoria xii, n. sp.
- Idactus granti*, Sokotra, GAHAN, p. 12, Bull. Liverp. Mus. iii; *I. succisus*, E. Africa, KOLBE, p. 306, Berlin. ent. Zeitschr. xlv : n. spp.
- Jamveonus sticheli*, E. Africa, KOLBE, p. 297, pl. iv, fig. 1, t. c. n. sp.
- Lamia textor* and *Morimus asper*, injurious habits, CECCONI (232).
- Lasioporus ambiguus*, E. Africa, KOLBE, p. 306, Berlin. ent. Zeitschr. 1900, n. sp.
- Leontium lameeri*, China, PIC, p. 18, Ann. Soc. ent. Belgique xlv, n. sp.
- Leprodiera bioculata*, China, FAIRMAIRE, p. 641, Ann. Soc. ent. France lxviii, n. sp.
- Leptalia macilenta*, larva, KINCAID, p. 376, pl. xxv, figg. 8-12, P. Washington Ac. ii.
- Leptura (Stenura) vaucheri*, Algeria, BEDEL, p. 336, Bull. Soc. ent. France 1900; *L. suberis*, Algeria, CHABAUT, p. 265, t. c.; *L. dissimilis*, China, FAIRMAIRE, p. 639, Ann. Soc. ent. France lxviii : n. spp.
- Leucographus murinus*, Madagascar, ALLAUD, p. 367, Bull. Mus. Paris 1899, n. sp.
- Lobarthron* subg. n. of *Prionus* for part of *Psilopus* Jak., SEMENOW, p. 254 and p. 333, Horæ Soc. ent. Ross. xxxiv.
- Macroprionus* subg. n., cf. *Prionus*.
- Mallosia græva* var. n. *cardioidensis*, PIC, p. 109, Bull. Soc. ent. France 1900.
- Mecothyreia peregrina*, *auratipennis*, E. Africa, KOLBE, p. 302, Berlin. ent. Zeitschr. xlv, n. spp.
- Melanauster macrospilus*, p. 349, *similis*, p. 350, Hainan, GAHAN, Ann. Nat. Hist. v, n. sp.
- Micromallosia* n. g. for *M. theresæ* n. sp., Mardin, PIC (1909), p. 15.
- Myiodola* n. g. near *Anthribia*, p. 87, for *M. perrieri*, *muscaria*, n. spp.,

- Madagascar, p. 88, and *Sagridola scalabrii* Fairm., FAIRMAIRE, Bull. Soc. ent. France 1900.
- Neodorcadion przewalskii* redescribed, JAKOWLEFF, pp. 71-73, Horæ Soc. ent. Ross. xxxiv.
- Neopolyarthron* subg. n. of *Prionus*, SEMENOW, p. 255, t. c.
- Niphona hookeri*, E. Asia, GAHAN, p. 351, Ann. Nat. Hist. v, n. sp.
- Nyctonympha glauca, annulata*, Venezuela, AURIVILLIUS, p. 420, Ofv. Ak. Forh. lvii, n. sp.
- Oberoa oculata* var. n. *borysthenica*, larva and habits, MOKRZECKI, Horæ Soc. ent. Ross. xxxiv, pp. 294-299, pl. i; *O. bimaculata*, larval habits, WEBSTER, p. 437, Ent. News Philad. xi.
- Oeme fuscus*, Sokotra, GAHAN, p. 12, Bull. Liverp. Mus. iii, n. sp.
- Oncoderes*: note on habits and metamorphosis, OHAUS (1956, p. 173).
- Pachydissus (Derolus) somalicus*, Somaliland, GAHAN, p. 32, P. Zool. Soc. London 1900, n. sp.
- Pelargoderus apicalis*, Hainan, GAHAN, p. 348, Ann. Nat. Hist. v, n. sp.
- Peribæum meinerti*, Venezuela, AURIVILLIUS, p. 409, Ofv. Ak. Forh. lvii, n. sp.
- Philematium sansibaricum* var. n. *transversalis*, KOLBE, p. 303, Berlin. ent. Zeitschr. 1900.
- Philus antennatus*, stridulating organ, GAHAN, p. 347, Ann. Nat. Hist. v.
- Phytæcia*: notes on with ? new subgenera, PIC, p. 16, Bull. Soc. zool. France xiv; *P. (Helladia)*, notes on species, PIC, pp. 139, 140, Bull. Soc. ent. France 1900; *P. croceipes* var. *annulifer*, *P. humeralis* var. *bethaniensis*, PIC, p. 67, Ent. Nachr. xxvi.
- P. akbesiana*, Syria, PIC, p. 20, Echange xvi, ? n. sp.; *P. ingeniculata*, *P. (Helladia) dilaticollis*, Syria, PIC, Ent. Nachr. xxvi, p. 67 : n. spp.
- Plagithmysus permundus*, p. 105, *diana*, pl. vi, fig. 11, Kauai, *collaris*, Maui, fig. 13, p. 107, *lamarckianus*, Hawaii, p. 110, *munroi*, Kauai, fig. 19, p. 112, SHARP, Fauna Hawaiianensis ii, n. spp.
- Planodes stratus*, Celebes, HELLER, p. 45, pl. fig. 7, Abh. Mus. Dresden ix, No. 5, n. sp.
- Plocoderus conradti* var. *strigicollis*, KOLBE, p. 303, Berlin. ent. Zeitschr. xlv.
- Pogonarthron* subg. n., cf. *Polyarthron*.
- Polyarthron*; notes on species, with new subgenera, *Pogonarthron*, *Polylobarthron*, SEMENOW, pp. 251-259, Horæ Soc. ent. Ross. xxxiv; *P.*: the subgenera, PIC, pp. 2, 3, Miscell. ent. viii.
- P. (subg. n. Pogonarthron) bedeli*, Buchara, SEMENOW, p. 249, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Polylobarthron* subg. n. of *Polyarthron* for *P. margelanicum*, SEMENOW, pp. 254, 258, t. c.
- Praonetha perplexa* referred to *Pterolophia* and figured, pl. xi, fig. 5, p. 123, GAHAN, Monogr. Christmas Island.
- P. sinensis*, China, FAIRMAIRE, p. 642, Ann. Soc. ent. France 1900, n. sp.
- Prinobius coxalis*, Christmas Is., GAHAN, p. 120, Monogr. Christmas Island, n. sp.
- Prionocalus simonsi*, p. 504, *whitei*, p. 505, Ecuador, *uniformis*, Peru, p. 505, WATERHOUSE, Ann. Nat. Hist. v, n. spp.
- Prionus*; revision of palæarctic, SEMENOW, pp. 325-334, Horæ Soc. ent. Ross. xxxiv; *P. brachypterus alpherakii* subsp. n., id. t. c. p. 324; *P.*, for subgen. n. cf. *Neopolyarthron*, *Lobarthron*, *Macroprius*.
- P. angheri*, Ashabad, BRANCSIK, p. 102, pl. iv, fig. 8, Jahresh. Ver. Trencsen. xxi; *P. (Macroprius subg. n.) heros*, Chinese Turkestan, SEMENOW, p. 320, Horæ Soc. ent. Ross. xxxiv : n. spp.
- Prymnopteryx meinerti*, Venezuela, AURIVILLIUS, p. 414, Ofv. Ak. Forh. lvii, n. sp.
- Pseudodinoptera* n. subg. of *Acmaeops* for *A. daghestanica* Pic, Pto, p. 82, Echange xvi.



- Pseudopidonia* n. g. near *Pidonia*, for *P. amurensis* n. sp., Siberia, PIC, p. 81, t. c.  
*Psilopus*; cf. *Lobarthron*.  
*Pyresthes rugicollis*, China, FAIRMAIRE, p. 642, Ann. Soc. ent. France lxviii, n. sp.  
*Rhagium sinense*, China, FAIRMAIRE, p. 638, t. c. n. sp.  
*Rosalia alpina*, variation, REITTER, pp. 130–132, Wien. ent. Zeit. xix; PIC, p. 11, Ent. Nachr. xxvi and p. 59, Echange xvi; CSIKI, pp. 100–102, Rov. Lapok vii.  
*Saperda populnea*; instinct, larval food-habits, BOAS (130).  
*S. maculithorax*, Japan, PIC, p. 19, Ann. Soc. ent. Belgique xlv, n. sp.  
*Sphingnotus yorkensis* Fairm. referred to *Tmesisternus*, SHARP, p. 384, Willey Results iv.  
*Stenoderus concolor* Mad., BLACKBURN, p. 230, P. Soc. Victoria xii.  
*Sybillia dancoi*, Patagonia, LAMEERE, p. 112, Ann. Soc. ent. Belgique xlv, n. sp.  
*Sybrinus* n. g. near *Sybra*, p. 12, for *S. commixtus* n. sp., Sokotra, p. 13, GAHAN, Bull. Liverp. Mus. iii.  
*Syllitus heros*, p. 231, *microps*, p. 232, Australia, BLACKBURN, P. Soc. Victoria xii, n. spp.  
*Tetropriopsis*, classification, CHABAUT, p. 263, Bull. Soc. ent. France 1900; note, PIC, p. 30, t. c.  
*Thoris septemguttata*, p. 228, *mærens*, p. 229, Australia, BLACKBURN, P. Soc. Victoria xii, n. spp.  
*Trachytola maculipennis*, p. 639, *nodicollis*, Tonkin, *rugiscapus*, China, p. 640, FAIRMAIRE, Ann. Soc. ent. France lxviii, n. spp.  
*Tragiscoschema nigroscriptum* Fairm., pl. iv, fig. 5, p. 307, KOLBE, Berlin. ent. Zeitschr. xlv.  
*Vadonia unipunctata* varr., PIC, Frelon viii, sep. pag. pp. 3, 4.  
*Xiphoteata luctifera*, ♂ characters, SHARP, p. 385, pl. xxxiv, fig. 6, Willey Results iv.  
*Xystrocera janthinicornis*, p. 299, *æquabilis*, p. 300, E. Africa, KOLBE, Berlin. ent. Zeitschr. 1900, n. spp.

## BRUCHIDÆ.

[Cf. BLACKBURN (123), PIC (1006), SEURAT (1205), SHARP (1209).]

- Tracheal system of larva, distinctions from *Curculionidæ*, SEURAT (1205).  
*Bruchus lyndhurstensis*, p. 62, *oodnadatta*, *quornensis*, p. 63, *persimulans*, p. 64, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxiv; *B. scapularis*, Brazil, PIC, p. 29, Bull. Soc. ent. France 1900; n. spp.

## CHRYSOMELIDÆ.

[Cf. BLACKBURN (123, 124), BELLEVOYE (90), BERG (100), BORDAS (144, 146), BRANCSIK (167), CSIKI (299, 300, 302), FABRE (385), FAIRMAIRE (394), FORMANEK (440), GAHAN (478, 479), GESTRO (496–498), HELLER (573), JACOBSON (640), JACOBY (644–648), KINCAID (711), KOLBE, W. (754), LESNE (816), MEIER (884, 885), PIC (1025–1027), REITTER (1092, 1095, 1099), SANDERSON (1147), SHARP (1209), SPAETH (1258, 1259), WEISE (131, 1394, 1396, 1397, 1398, 1401, 1403).]

- Corrections and additions to Douckier's catalogue of *Hispide*, GESTRO, pp. 433–440, Ann. Mus. Genova xl.  
 Catalogue of *Sagrides*, CLAVAREAU, pp. 269–280, Ann. Soc. ent. Belgique xlv and PIC, t. c. pp. 353, 354.

Structure of larvae and respiratory appendages of *Donacia*, SANDERSON (1147).

Male sexual glands, BORDAS (146).

Eggs and case-making of *Clythrides*, FABRE (385).

Stridulating organs of *Hispida*, *Clythrida*, GAHAN (478).

*Achenops*? *puncticollis*, S. Africa, JACOBY, p. 219, P. Zool. Soc. London 1900, n. sp.

*Aenidea bengalensis*, India, JACOBY, p. 133, Mem. Soc. ent. Belgique vii, n. sp.

*Agbalus nigroviolaceus*, p. 464, *bolivianus*, p. 465, *chiriquensis*, *subcostatus*, p. 466, *strigicollis*, p. 467, S. America, JACOBY, Tr. ent. Soc. London 1900, n. spp.

*Alethaxius angulicollis*, p. 490, *A.*? *sericeus*, p. 491, *A. verrucosus*, p. 492, S. America, JACOBY, t. c. n. spp.

*Alurnus*, synonymical note, GESTRO, p. 468, Ann. Mus. Genova xl.

*Anthipha mandarensis*, India, JACOBY, p. 134, Mem. Soc. ent. Belgique vii, n. sp.

*Aphthona ovatipennis*, p. 245, *bicolor*, *marginata*, p. 246, *minuta*, p. 247, Africa, JACOBY, P. Zool. Soc. London 1900; *A. indica*, p. 120, *lugeli*, p. 121, India, JACOBY, Mem. Soc. ent. Belgique vii : n. spp.

*Aracyntha thoracica*, Brazil, JACOBY, p. 471, Tr. ent. Soc. London 1900, n. sp.

*Argoa mucronata*, Brazil, JACOBY, p. 500, t. c. n. sp.

*Asbecesta ornaticollis*, *ornata*, pl. xx, fig. 11, Africa, JACOBY, p. 255, P. Zool. Soc. London 1900, n. spp.

*Aspidolopha usambarica*, Africa, *manilensis*, Philippines, WEISE, p. 448, Deutsche ent. Zeitschr. 1900, n. spp.

*Aspidomorpha difformis*, characters, WEISE, p. 295, Arch. Naturg. lxi.

*A. gorhami*, Natal, WEISE, p. 445, Deutsche ent. Zeitschr. 1900, n. sp.

*Blepharida regularis*, Africa, JACOBY, p. 252, P. Zool. Soc. London 1900, n. sp.

*Campylochira fulvicornis*, Brazil, JACOBY, p. 493, Tr. ent. Soc. London 1900, n. sp.

*Camptolenes pubifrons*, Delagoa Bay, JACOBY, p. 209, P. Zool. Soc. London 1900, n. sp.

*Candezea centromaculata*, Natal, JACOBY, pl. xx, fig. 10, *sulcicollis*, Mashonaland, p. 261, *moliroensis*, Congo, *oneili*, p. 262, *livingstoni*, p. 263, S. Africa, JACOBY, t. c.; *C. erratica*, p. 137, *quadrinaculata*, *labiata*, p. 138, *trifasciata*, p. 139, India, JACOBY, Mem. Soc. ent. Belgique vii, n. spp.

*Canistra bitorosa*, Brazil, WEISE, p. 460, Deutsche ent. Zeitschr. 1900, n. sp.

*Cassida rubiginosa* (= *rugosopunctata* Motsch. = *erudita* Baly), WEISE, p. 294, Arch. Naturg. lxi; *C. profundeistriata* sp. queried as *C. mera* Germ., BLACKBURN, p. 169, Tr. R. Soc. S. Austral. xxiv; *C. thoracica*, *ferruginea*, distinctions, BRDEL, p. 117, Bull. Soc. ent. France 1901; *C. piperata* and allies, synonymy, WEISE, p. 295, Arch. Naturg. lxi; *C. kraatsi* n. n. for *C. spaethi*, WEISE, p. 458, Deutsche ent. Zeitschr. 1900; *C. murreae*, larva, WEISE, p. 272, t. c.

*C. kraatsi*, Amur, WEISE, p. 295, Arch. Naturg. lxi; *C. hobbes*, Usambara, WEISE, p. 217, Deutsche ent. Zeitschr. 1900 : n. spp.

*Cassidopsis perrieri*, Madagascar, FAIRMAIRE, p. 89, Bull. Soc. ent. France 1900, n. sp.

*Cerathispa* Weise, must be displaced, GESTRO, p. 552, Ann. Mus. Genova xl [cf. *Dorcathepsa*]; *Cerathispa* subg. n., cf. *Hispella*.

*Chalcocnema subaterrima*, Natal, JACOBY, p. 254, P. Zool. Soc. London 1900, n. sp.

*Chalcophyma lefevrei*, Amazona, JACOBY, p. 456, Tr. ent. Soc. London 1900, n. sp.

- Chalcophana fenestrata*, p. 495, *brevis*, p. 496, *cœruleipennis*, p. 497, *erichsoni*, *picta*, p. 498, S. America, JACOBY, t. c. n. spp.
- Chiridula anatolica*, Asia Minor, WEISE, p. 166, Bodemeyer (131) n. sp.
- Chirodica puncticollis*, p. 249, *fulvicornis*, p. 250, Africa, JACOBY, P. Zool. Soc. London 1900, n. spp.
- Chrysochus hirsutus*, Burma, JACOBY, p. 117, Mem. Soc. ent. Belgique vii, n. sp.
- Chrysodina diversicornis*, *subcostata*, p. 454, *thoracica*, p. 455, *laticollis*, p. 456, S. America, JACOBY, Tr. ent. Soc. London 1900, n. spp.
- Chrysomela hyrcana* var. n. *chalybea*, BRANCŠIK, p. 103, Jahresh. Ver. Trencsen. xxi; *C. varians*, copula etc., SCHENKLING, pp. 7, 8, Illustr. Zeitschr. Ent. v; *C. subsulcata*, early stages, KINCAID, p. 377, pl. xxvi, figg. 1-7, P. Washington Ac. ii; *C. marginata* ♂ armature, *altimontana* and varr., p. 282, other local varr., pp. 282-284, WEISE, Arch. Naturg. lxvi.
- Chrysomela sirentensis*, Italy, MEIER, p. 78, Ent. Nachr. xxvi; *C. gensanensis*, Korea, WEISE, p. 282, Arch. Naturg. lxvi; *C. livingstoni*, Natal, JACOBY, p. 240, P. Zool. Soc. London 1900; *C. fulvoaenea*, *madrasæ*, India, p. 118, *siamensis*, Siam, p. 119, JACOBY, Mem. Soc. ent. Belgique vii: n. spp.
- Cladocera variegata*, Mombas, WEISE, p. 458, Deutsche ent. Zeitschr. 1900, n. sp.
- Cleorina suturata*, Bengal, JACOBY, p. 111, Mem. Soc. ent. Belgique vii, n. sp.
- Cleptor*, characters and position, BLACKBURN, p. 167, T. R. Soc. S. Austral. xxiv.
- C. haroldi*, Queensland, BLACKBURN, p. 168, t. c. n. sp.
- Clytra 9-punctata*, *atraxaphridis*, varr., WEISE, pp. 272, 273, Arch. Naturg. lxvi; *C. atraxaphridis* var. n. *ashabadensis*, p. 103, pl. iv, fig. 9, BRANCŠIK, Jahresh. Ver. Trencsen. xxi; *C. quadripunctata*, eggs and young larva, CHAPMAN, Ent. Rec. xii, pp. 213, 214; *C. bodemeyeri*, Asia Minor, WEISE, p. 163, Bodemeyer (131) n. sp.
- Cneorane birmanica*, Burma, JACOBY, p. 132, Mem. Soc. ent. Belgique vii, n. sp.
- Cœnobius plagiatus*, S. Africa, JACOBY, p. 218, P. Zool. Soc. London 1900, n. sp.
- Colaspis perplexa*, p. 472, *corrugata*, *elegans*, p. 473, *rufipes*, p. 474, *batesi*, *imitans*, p. 475, *amazonæ*, p. 476, *venezuelæ*, *porosa*, p. 477, *multicostata*, *viridipunctata*, p. 478, *colombica*, p. 479, *amabilis*, p. 480, *ornatipennis*, *C. heteroclita*, p. 481, S. America, JACOBY, Tr. ent. Soc. London, 1900, n. spp.
- Colaspoides dentata* n. n. for *spinipes*, Jac. nec Chap., JACOBY, p. 113, Mem. Soc. ent. Belgique vii.
- C. lateralis*, p. 113, *montana*, p. 114, India, JACOBY, Mem. Soc. ent. Belgique vii; *C. pavonina*, p. 504, *opulenta*, *abdominalis*, p. 505, *paraguayensis*, p. 506, *decemlineata*, *flavofasciata*, p. 507, *balyi*, p. 508, S. America, JACOBY, Tr. ent. Soc. London 1900: n. spp.
- Colasposoma*=(*Dasychlorus* Fairm.) and *C. pradierei*=(*D. passeti* Fairm.), *C. fairmairei*=(*D. varicolor* Fairm.), JACOBY, p. 223, P. Zool. Soc. London 1900.
- Colasposoma conradi*, *alutaceum*, p. 221, *subaureum*, p. 222, *obscurum*, p. 223, Africa, JACOBY, t. c.; *C. rufipes*, p. 114, *laticolle*, p. 115, *bifasciatum*, *planifrons*, p. 116, India, JACOBY, Mem. Soc. ent. Belgique vii: n. spp.
- Coptocephala falkensteini*, referred to *Peploptera*, JACOBY, p. 214, P. Zool. Soc. London 1900.
- C. freiji*, Centr. Asia, REITTER, p. 165, Wien. ent. Zeit. xix, n. sp.
- Coptocycla transparipennis*, referred to *Aspidomorpha* var. n. *retula*, WEISE, p. 295, Arch. Naturg. lxvi.

- Corynodes nigripennis, bimaculicollis*, Cameroons, JACOBY, p. 227, P. Zool. Soc. London 1900, n. spp.
- C. micheli*, Abyssinia, LESNE, p. 19, Bull. Mus. Paris 1900; *C. bennigseni*, E. Africa, WEISE, p. 449, Deutsche ent. Zeitschr. 1900 : n. spp.
- Coytiera anea*, Colombia, JACOBY, p. 468, Tr. ent. Soc. London 1900, n. sp.
- Crioceris schneideri*, Vallombrosa, *liensis*, p. 268, *egregia*, p. 269, Ili, WEISE, Arch. Naturg. lvi; *C. militaris*, Mashonaland, JACOBY, p. 206, P. Zool. Soc. London 1900; *C. sapphiripennis*, N. Guinea, JACOBY, p. 388, Ent. Zeit. Stettin lxi : n. spp.
- Cryptocephalus sarafechanensis* varr., p. 274, *monilis* var., p. 275, *flexuosus* var. *eusenicus*, p. 277, *marginellus* var. *romanus*, p. 278, *macroductylus* ♂ structure, *transcaucasicus*, note, p. 279, WEISE, Arch. Naturg. lvi; *C. bistripunctatus* var. *posticeinstitutus*, PIC, p. 88, Echange xvi; *C. vittatus* varr., PIC, pp. 104-106, Miscell. ent. viii.
- C. normandi, bedeli*, Algeria, PIC, p. 68, Echange xvi; *C. (Proctophysus) bodemeyeri*, Asia Minor, WEISE, p. 164, Bodemeyer (131); *C. rickmersi*, Buchara, p. 275, *paradisiacus*, Mardin, p. 276, *rossicus*, Orenburg, p. 277, *properus*, Ili, p. 278, WEISE, Arch. Naturg. lvi; *C. ornaticollis*, p. 214, *severini, strigicollis*, p. 215, *salisburyensis*, p. 216, *flavo-ornatus, v-nigrum*, p. 217, Africa, JACOBY, P. Zool. Soc. London 1900, n. spp.
- Damia capitata*, pl. xx, fig. 1, p. 207, *frontalis*, fig. 2, p. 208, S. Africa, JACOBY, t. c.; *D. fuscitarsis*, Burma, JACOBY, p. 99, Mem. Soc. ent. Belgique vii : n. spp.
- Decaria obscura*, Sierra Leone, JACOBY, p. 251, P. Zool. Soc. London 1900, n. sp.
- Demotina lateralis*, Christmas Is., GAHAN, p. 126, Monogr. Christmas Island, n. sp.
- Diacantha divisa* ♂ = (*mutica* Gah.), JACOBY, p. 265, P. Zool. Soc. London 1900.
- Dibolia bimaculata, africana*, Africa, JACOBY, p. 253, t. c. n. spp.
- Didadispa belliana*, E. Africa, GESTRO, p. 550, Ann. Mus. Genova xl, n. sp.
- Dictyneis canaliculata*, Chili, JACOBY, p. 502, Tr. ent. Soc. London 1900, n. sp.
- Diorhabda sareptana* var. *n. flaveola*, Ashabad, BRANCSIK, p. 104, Jahresh. Ver. Trencsen. xxi.
- D. koltzei*, Ili, p. 288, *rickmersi*, Buchara, p. 289, WEISE, Arch. Naturg. lvi, n. spp.
- Distolaca javanica*, Java, p. 469, *cribricollis*, India, p. 471, GESTRO, Ann. Mus. Genova xl, n. spp.
- Donacia aquatica, dentipes*, synonymical note, SEIDLITZ, pp. 14-17, Wien. ent. Zeit. xix, and WEISE, t. c. p. 125.
- D. malayana*, Singapore, CSIKI, p. 403, Termes. Fuzetek xxiii, n. sp.
- Dorcathispa* n. n. for *Cerathispa*, Weise nec Gestro, WEISE, p. 458, Deutsche ent. Zeitschr. 1900.
- Edua angustula*, W. Australia, BLACKBURN, p. 66, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Endocephalus tibialis*, p. 502, *nigripes, militaris*, p. 503, S. America, JACOBY, Tr. ent. Soc. London 1900, n. spp.
- Enneamera scutellata*, N. India, JACOBY, p. 126, Mem. Soc. ent. Belgique vii, n. sp.
- Estcourtiana* n. g. near *Ergana*, for *E. bifasciata* n. sp., S. Africa, JACOBY, p. 260, P. Zool. Soc. London 1900.
- Eugaleria* n. g. *Galerucinae*, p. 103, for *E. reitteri* n. sp., Siberia, p. 104, pl. iv, fig. 10, BRANCSIK, Jahresh. Ver. Trencsen. xxi.
- Euluperus major*, characters, WEISE, p. 288, Arch. Naturg. lvi.
- Eumelepta dypeata*, Bengal, JACOBY, p. 135, Mem. Soc. ent. Belg. n. sp.



- Eurydemus marginatus*, p. 232, *maculipennis*, p. 233, *brevilineatus*, p. 234, Congo, JACOBY, P. Zool. Soc. London 1900, n. spp.
- Eutornus clarki* n. n. for *Oedionychis africana* Jac., JACOBY, p. 266, t. c.
- Fidia viticida*, injuries, natural history, SLINGERLAND (1231).
- Foudrania* n. g., p. 289, near *Arrhenocata*, for *F. rufiventris* n. sp., Turkestan, p. 291, WEISE, Arch. Naturg. lxvi.
- Glyptoscelis dohrni*, Colombia, JACOBY, p. 501, Tr. ent. Soc. London 1900, n. sp.
- Gynandrophthalma subdivisa*, Assam, JACOBY, p. 98, Mem. Soc. ent. Belgique vii; *G. subrugosa*, *marginicollis*, Africa, JACOBY, p. 213, P. Zool. Soc. London 1900, n. spp.
- Haemonia equiseti*, habits, metamorphoses, synonymy, BELLEVOYE (90).
- Haltica lacunosa*, Constantinople, WEISE, p. 164, Bodemeyer (131); *H. breviscula*, Lenkoran, WEISE, p. 293, Arch. Naturg. lxvi : n. spp.
- Haplosomyx durivieri*, Khasia Hills, JACOBY, p. 130, Mem. Soc. ent. Belgique vii, n. sp.
- Hemizantha piceipes* and *terminata*, confusion corrected, JACOBY, p. 266, P. Zool. Soc. London 1900.
- Herna* n. g. near *Melitonoma*, for *H. insignis* n. sp., Moinbo, WEISE, p. 447, Deutsche ent. Zeitschr. 1900.
- Hermesia brunnea*, Brazil, JACOBY, p. 489, Tr. ent. Soc. London 1900; *H. cenea*, Paraguay, p. 351, *lampros*, Brazil, p. 352, JACOBY, Ann. Mus. Genova xl : n. spp.
- Hespera natalensis*, *intermedia*, S. Africa, JACOBY, p. 248, P. Zool. Soc. London 1900, n. spp.
- Himerida chapuisi*, Mashonaland, JACOBY, p. 238, t. c. n. sp.
- Hispa deserticola*, E. Africa, WEISE, p. 214, Deutsche ent. Zeitschr. 1900, n. sp.
- Hispella* (*Cerathispa* subg. n.) *alternata*, E. Africa, WEISE, t. c. p. 213, n. sp.
- Hoplasoma dilaticornis*, Bengal, JACOBY, p. 128, Mem. Soc. ent. Belgique vii, n. sp.
- Hoplionota weyersi*, p. 20, *clavareau*, p. 21, Sumatra, SPAETH, Ann. Soc. ent. Belgique xlv, n. spp.
- Hydrothassa hannoverana*, life-history, KOLBE (754).
- Hyphasis obscuripennis*, Burma, JACOBY, p. 122, Mem. Soc. ent. Belgique vii, n. sp.
- Hypocassida passaria*, E. Africa, WEISE, p. 215, Deutsche ent. Zeitschr. 1900, n. sp.
- Iphimeia bifasciata*, referred to *Colaspoides*, JACOBY, p. 463, Tr. ent. Soc. London 1900.
- I. fulvicollis*, Brazil, JACOBY, p. 463, t. c. n. sp.
- Ivongius puncticollis*, Mozambique, JACOBY, p. 232, P. Zool. Soc. London 1900, n. sp.
- Jamesonia* (*Thrymnes*) *femoralis*, pl. xx, fig. 12, p. 250, *nigripennis*, p. 251, S. Africa, JACOBY, t. c. n. spp.
- Labidostomis frontalis*, *iconiensis*, p. 162, *karamanica*, p. 163, Asia Minor, WEISE, Bodemeyer (131); *L. stenostoma*, Buchara, *villosula*, Mardin, p. 270, *peregrina*, Eriwan, p. 271, *schneideri*, Buchara, p. 272, WEISE, Arch. Naturg. lxvi : n. spp.
- Lamprospheus bimaculatus*, p. 457, *bicolorus*, p. 458, *fulvicornis*, *humeralis*, p. 459, *fulvimanus*, *dimidiatus*, p. 460, *angulicollis*, p. 461, *terminatus*, p. 462, S. America, JACOBY, Tr. ent. Soc. London 1900, n. spp.
- Lefevrea abdominalis*, sexes, JACOBY, p. 230, P. Zool. Soc. London 1900.
- L. brunnea*, p. 229, *hirsuta*, p. 230, Mashonaland, JACOBY, t. c. n. spp.
- Leiometopona* n. g. near *Crepidodera*, for *L. suturalis* n. sp., Ashabad, pl. iv, fig. 11, BRANCsik, Jahresh. Ver. Trencsen. xxi.
- Lema tristis* Herbst = (*flavipes* Suffr.), *L. weisei* Seidl. to be deleted, *L. margellanica*, *akini* are varr. of *4-maculata* Gebl., WEISE, p. 267, Arch.

- Naturg. lxi; *L. natalensis*, variation, *tarsata* Jac. is a var., JACOBY, p. 205, P. Zool. Soc. London 1900.
- L. duvivieri*, p. 203, *bomaensis*, p. 204, *dunbrodiensis*, *nigrotibialis*, p. 205, Africa, JACOBY, t. c.; *L. signatipennis*, p. 95, *duvivieri*, p. 96, *subiridea*, *fulvofrontalis*, p. 97, *fulvimana*, p. 98, India, JACOBY, Mem. Soc. ent. Belgique vii; *L. dohrni*, Sumatra, p. 382, *meeki*, Fergusson Is., p. 383, *laportei*, Java, *malayana*, N. Guinea, p. 384, *fruhstorferi*, Java, p. 385, *dohertyi*, Sumbawa, p. 386, *niasensis*, Nias Is., p. 387, JACOBY, Ent. Zeit. Stettin lxi : n. spp.
- Lepronota discoidalis*, Brazil, JACOBY, p. 464, Tr. ent. Soc. London 1900, n. sp.
- Leprotella* n. g. near *Leprotea*, p. 100, for *L. cashmirensis* n. sp., Kashmir, p. 101, JACOBY, Mem. Soc. ent. Belgique vii.
- Leucastra bimaculata*, Natal, JACOBY, p. 207, P. Zool. Soc. London 1900, n. sp.
- Lochmæa kubanensis*, Caucasus, FORMANEK, p. 127, Wien. ent. Zeit. xix, n. sp.
- Lochmæa ornaticollis*, Bucharæ, REITTER, p. 231, pl. ii, fig. 8, t. c. n. sp.
- Longitarsus africanus*, variation, JACOBY, p. 266, P. Zool. Soc. London 1900.
- L. picicollis*, *iconiensis*, Asia Minor, WEISE, p. 165, Bodemeyer (131); *L. spilotus*, Margelan, WEISE, p. 294, Arch. Naturg. lxi : n. spp.
- L. salisburyensis*, S. Africa, JACOBY, p. 244, P. Zool. Soc. London 1900, n. sp.
- Luperocella* n. g. *Celomerinæ*, for *L. hirsuta* n. sp., Burma, JACOBY, p. 130, Mem. Soc. ent. Belgique vii.
- Luperodes nigrum* All. (as *Malacosoma*) ♀ = (*fulvicollis* Quedenf.), WEISE, p. 457, Deutsche ent. Zeitschr. 1900.
- Luperus chevrolati* Joann. note, WEISE, p. 287, Arch. Naturg. lxi; *L. scutellatus*, hab. Madagascar, JACOBY, p. 266, P. Zool. Soc. London 1900.
- L. (Nymphius) forcipifer*, Asia Minor, WEISE, p. 164, Bodemeyer (131); *L. (Calomicrus) jucundus*, Tokmak, p. 286, *heydeni*, Adalia, *L. rhilensis*, Rhilo Dagh, p. 287, WEISE, Arch. Naturg. lxi; *L. marshalli*, Natal, JACOBY, p. 256, P. Zool. Soc. London 1900 : n. spp.
- Lygaria* and allies, characters, variation of species, WEISE, pp. 269-271, Deutsche ent. Zeitschr. 1900.
- L. terminata*, Cameroons, JACOBY, p. 241, P. Zool. Soc. London 1900, n. sp.
- Lyperus pravei*, Caucasus, JACOBSON, p. 141, Horæ Soc. ent. Ross. xxxiii, n. sp.
- Macetes clypeata*, Port Elizabeth, JACOBY, p. 224, P. Zool. Soc. London 1900, n. sp.
- Macrima albicans*, Bengal, JACOBY, p. 134, Mem. Soc. ent. Belgique vii, n. sp.
- Malacosoma donkieri*, hab., Madagascar, JACOBY, p. 266, P. Zool. Soc. London 1900.
- M. variipes*, Natal, JACOBY, p. 256, t. c. n. sp.
- Malaxia orientalis*, India, JACOBY, p. 129, Mem. Soc. ent. Belgique vii, n. sp.
- Mecistes chapuisi*, Tumbu, JACOBY, p. 226, P. Zool. Soc. London 1900, n. sp.
- Mecistomela thoracica* varr. n. *trinotata*, *quinguenotata*, *M. vicina* var. n. *designata*, BERG, p. 256, Comun. Mus. Buenos Aires i.
- Megasceloides circumvinctus*, W. Australia, BLACKBURN, p. 65, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Melasoma quadrilineatum*, Tati, JACOBY, p. 243, P. Zool. Soc. London 1900, n. sp.
- Melinodeu* n. g. *Endocephalinæ*, for *M. metallica* n. sp., Brazil, JACOBY, p. 509, Tr. ent. Soc. London 1900.

- Metaxyonycha fasciata*, *batesi*, synonymy, characters, JACOBY, p. 471, Tr. ent. Soc. London 1900.
- M. bogotensis*, p. 469, Bogota, *rugoso*, Mexico, p. 470, t. c. n. spp.
- Micraphthona* n. g. near *Luperomorphus*, p. 125, for *M. nigrita* n. sp., N. India, p. 126, JACOBY, Mem. Soc. ent. Belgique vii.
- Microhermesia* n. g. *Colaspinae*, for *M. hirticollis* n. sp., Mashonaland, JACOBY, pl. xx, fig. 7, p. 220, P. Zool. Soc. London 1900.
- Mombasica magna*, Africa, WEISE, p. 457, Deutsche ent. Zeitschr. 1900, n. sp.
- Monocida inornata*, Mashonaland, JACOBY, p. 259, P. Zool. Soc. London 1900, n. sp.
- Monolepta striatipennis*, p. 257, *nigrocincta*, *exclamationis*, pl. xx, fig. 9, p. 258, Africa, JACOBY, t. c.; *M. semialba*, Burma, p. 136, *cardoni*, Bengal, p. 137, JACOBY, Mem. Soc. ent. Belgique vii : n. spp.
- Neocles innocuus*, N. S. Wales, BLACKBURN, p. 169, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Nisotra cardoni*, Bengal, JACOBY, p. 195, Mem. Soc. ent. Belgique vii, n. sp.
- Nodostoma kanarense*, referred to *Pagria*, JACOBY, p. 109, Mem. Soc. ent. Belgique vii.
- N. sikkimensis*, p. 102, *anchoralis*, p. 103, *rotundicollis*, p. 104, *irregulare*, *weisei*, p. 105, *abbreviatum*, p. 106, *mandarense*, p. 107, *cardoni*, p. 108, India, JACOBY, t. c. n. spp.
- Odontiomorpha* n. g. *Odontionopinae*, p. 238, for *O. minuta* n. sp., Natal, pl. xx, fig. 6, p. 239, JACOBY, P. Zool. Soc. London 1900.
- Odontionycha calvaria*, p. 215, *neglecta*, p. 216, Usambara, WEISE, Deutsche ent. Zeitschr. 1900; *O. seriatopunctata*, S. America, SPAETH, p. 578, Ann. Mus. Genova xl : n. spp.
- Odontiopa cœrulea*, Mashonaland, JACOBY, p. 228, P. Zool. Soc. London 1900, n. sp.
- Oedionychis africana* Dej. = (*natalensis* Baly), *Oe. rugicollis* and *africanus* Jac. referred to *Eutornus*, JACOBY, p. 266, t. c.
- Oides flavipennis*, Africa, WEISE, p. 454, Deutsche ent. Zeitschr. 1900; *O. quadrimaculata*, p. 126, *andrewsi*, p. 127, Burma, *thibettana*, Tibet, p. 128, JACOBY, Mem. Soc. ent. Belgique vii : n. spp.
- Omoplate pallidipennis* etc., habits, OHAUS, p. 230, Ent. Zeit. Stettin lxi.
- Ootheca*, characters amended, WEISE, p. 451, Deutsche ent. Zeitschr. 1900.
- O. mutabilis*, p. 452, *orientalis*, *bennigseni*, p. 453, *longula*, p. 454, WEISE, t. c. n. spp.
- Otilea fulva*, p. 494, *foveipennis*, p. 495, S. America, JACOBY, Tr. ent. Soc. London 1900, n. spp.
- Oxycephala carinaerosiris*, New Guinea, CSIKI, p. 196, Termes. Fuzetek xxiii, n. sp.
- Pachybrachys scripticollis* var. n. *letourneuxi*, PIC, Frelon viii, sep. pag. p. 5; *P. tessallatus* var. *syriacus*, WEISE, p. 281, Arch. Naturg. lxvi.
- P. tunisicus*, Tunisia, PIC, p. 63, Echange xvi; *P. mardinensis*, p. 279, *misellus*, p. 280, Mardin, *antigæ*, Catalonia, p. 281, WEISE, Arch. Naturg. lxvi : n. spp.
- Palimbola* n. g. near *Melasoma*, p. 449, for *P. nigripes* n. sp., Africa, p. 450, WEISE, Deutsche ent. Zeitschr. 1900.
- Paria subanea*, La Plata, JACOBY, p. 510, Tr. ent. Soc. London 1900, n. sp.
- Pausiris subfasciatus*, p. 239, *fuscitarsis*, p. 240, S. Africa, JACOBY, P. Zool. Soc. London 1900, n. spp.
- Pedrillia kwaiensis*, Africa, WEISE, p. 446, Deutsche ent. Zeitschr. 1900, n. sp.
- Peploptera apicata*, pl. xx, fig. 3, p. 210, *lefevrei*, *semifasciata*, p. 211, *anchoralis*, p. 212, S. Africa, JACOBY, P. Zool. Soc. London 1900, n. spp.
- Phædon pyritosus* var. *carulescens*, WEISE, p. 286, Arch. Naturg. lxvi.
- P. (Sternoplatys) baicalicus*, E. Siberia, *deubeli*, Transsylvania, *subtilis*,

- Margelan, WEISE, p. 285, t. c.; *P. assamensis*, Assam, JACOBY, p. 120, Mem. Soc. ent. Belgique vii : n. spp.
- Phyllostreta rubrithorax*, Jericho, PIC, p. 80, Echange xvi; *P. erysimi*, Asia Minor, WEISE, p. 166, Bodemeyer (131); *P. turcmenica*, Taschkent, WEISE, p. 138, Deutsche ent. Zeitschr. 1900; *P. capensis*, p. 243, *unicostata*, p. 244, S. Africa, JACOBY, P. Zool. Soc. London 1900 : n. spp.
- Phytodecta quinquepunctata* var. n. *flavipennis*, KRAUSS, p. 241, Wien. ent. Zeit. xix.
- Plagioderia congoensis*, Africa, JACOBY, p. 242, P. Zool. Soc. London 1900, n. sp.
- Plateumaris sulcifrons*, Zeitun, WEISE, p. 267, Arch. Naturg. lxvi, n. sp.
- Platypria sumatrensis*, Sumatra, CSIKI, p. 196, Termes. Fuzetek xxiii, n. sp.
- Platyzantha elegans* (Har. as *Luperus*) = (*costatipennis* Jac. = *Ap. costipennis* Fairm. = *Megalogn. haroldi* Fairm.), WEISE, p. 457, Deutsche ent. Zeitschr. 1900.
- P. bicincta*, Mashonaland, pl. xx, fig. 8, p. 264, JACOBY, P. Zool. Soc. London 1900, n. sp.
- Podagrica desertorum*, Ashabad, BRANCSIK, p. 104, Jahresh. Ver. Trencsen. xxi, n. sp.
- Pœcilaspis boggianii*, Paraguay, SPAETH, p. 577, Ann. Mus. Genova xl, n. sp.
- Pœphila costatipennis*, *fulvipes*, systematic position, JACOBY, p. 265, P. Zool. Soc. London 1900.
- Polychalca cribrata*, Colombia, WEISE, p. 460, Deutsche ent. Zeitschr. 1900, n. spp.
- Promecothea papuana*, New Guinea, CSIKI, p. 80, Termes. Fuzetek xxiii; *P. biroi*, New Guinea, CSIKI, p. 196, t. c. : n. spp.
- Psecadia* n. n. for *Psecas* Weise, WEISE, p. 458, Deutsche ent. Zeitschr. 1900.
- Pseudocalaspidea cassidea* var. n. *jacobsoni*, CSIKI, p. 403, Termes. Fuzetek xxiii.
- Pseudocalaspis puberula*, referred to *Macetes*, JACOBY, p. 265, P. Zool. Soc. London 1900.
- P. cupreofemorata*, Mashonaland, pl. xx, fig. 4, *severini*, Congo, p. 225, JACOBY, t. c.; *P. himalayensis*, India, JACOBY, p. 111, Mem. Soc. ent. Belgique vii : n. spp.
- Pseudodera cyanipennis*, Bengal, JACOBY, p. 122, t. c. n. sp.
- Pseudomela nigripennis*, Cameroons, JACOBY, p. 421, P. Zool. Soc. London 1900, n. sp.
- Pseudometaxia* n. g. near *Hyperaxia*, p. 101, for *P. serraticollis* n. sp., Burma, p. 102, JACOBY, Mem. Soc. ent. Belgique vii.
- Pseudosyagrus africanus*, Tati, JACOBY, p. 228, Bull. Mus. Paris 1900, n. sp.
- Psylliodes longicollis*, Armenia, *danieli*, Tyrol, p. 292, *schwarzi*, Monte Rosa, p. 293, WEISE, Arch. Naturg. lxvi; *P. longicollis*, Armenia, REITTER, p. 59, Deutsche ent. Zeitschr. 1900 : n. spp.
- P. tenuipunctata*, Christmas Is., GAHAN, p. 127, Monogr. Christmas Island, n. sp.
- Rhabdopterus peruensis*, p. 482, *imitans*, *colombiensis*, p. 483, *apicicornis*, p. 484, *amazonicus*, p. 485, *apicipes*, *abdominalis*, p. 486, *venezuelensis*, p. 487, *fulvicollis*, p. 488, *semifulvus*, p. 489, S. America, JACOBY, Tr. ent. Soc. London 1900, n. spp.
- Rhembastus geminatus*, p. 234, *affinis*, *nigripes*, p. 235, *uniformis*, *interstitialis*, p. 236, *irregularis*, p. 237, Africa, JACOBY, P. Zool. Soc. London 1900, n. spp.
- Rhyparida rossi*, p. 124, *modesta*, p. 125, Christmas Is., GAHAN, Monogr. Christmas Island, n. spp.
- Rupilia angulaticollis*, p. 66, *approximana*, p. 67, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xxiv, n. spp.



- Sagra ferox* = (*longefemorata* Fairm., *opaca* Jac., *longipes* Kolbe and *kolbei* Clav.), *S. striatipennis* Jac. = (*sulcipennis* K.), *S. cambiari* Duv. = (*tibialis* Fairm.), WEISE, p. 446, Deutsche ent. Zeitschr. 1900; *S. kolbei* n. n. for *longipes* K. nec Baly, CLAVAREAU, p. 269, Ann. Soc. ent. Belgique xlv.
- Sardoides nigricornis*, Natal, JACOBY, p. 263, P. Zool. Soc. London 1900, n. sp.
- Sastroides tibialis*, India, JACOBY, p. 131, Mem. Soc. ent. Belgique vii, n. sp.
- Scelodonta celebensis* and *leviuscula*, note on, HELLER, p. 46, Abh. Mus. Dresden ix, No. 5.
- S. sexplagiata*, Natal, JACOBY, p. 226, pl. xx, fig. 5, P. Zool. Soc. London 1900, n. sp.
- Semicnema macella*, Kiachta, WEISE, Arch. Naturg. lxvi, p. 291, n. sp.
- Sermyla maculata*, referred to *Sermylodes*, JACOBY, p. 257, P. Zool. Soc. London 1900.
- Sermylodes unifasciata*, Mashonaland, JACOBY, p. 257, t. c. n. sp.
- Serraphula elongata*, S. Africa, JACOBY, p. 247, t. c. n. sp.
- Silurnus* n. g. near *Alurnus*, p. 219, for *S. consanguineus* n. sp., Sao Paulo, p. 218, WEISE, Deutsche ent. Zeitschr. 1900.
- Sphaeroderma ornatipennis* n. n. for *flavoplagiata* Jac. 1896, JACOBY, p. 124, Mem. Soc. ent. Belgique vii.
- S. mashonana*, Salisbury, JACOBY, p. 252, P. Zool. Soc. London 1900; *S. mandarensis*, p. 123, *brevicornis*, p. 124, India, JACOBY, Mem. Soc. ent. Belgique vii : n. spp.
- Sphaeropsis fruhstorferi*, Bahia, JACOBY, p. 499, Tr. ent. Soc. London 1900, n. sp.
- Syagrus opacus, antennatus*, S. Africa, JACOBY, p. 231, P. Zool. Soc. London 1900, n. spp.
- Syoplia africanus*, W. Africa, JACOBY, p. 265, t. c.; *S. nigripennis*, India, JACOBY, p. 132, Mem. Soc. ent. Belgique vii : n. spp.
- Taphinella bengalensis*, India, JACOBY, p. 140, Mem. Soc. ent. Belgique vii, n. sp.
- Therpis* n. g. near *Aphophyllia*, p. 455, for *T. smaragdina* n. sp., Mombas, WEISE, p. 456, Deutsche ent. Zeitschr. 1900.
- Timarcha violaceonigra* var. n. *fracassii*, MEIER, p. 78, Ent. Nachr. xxvi.
- T. schenklingi*, Abruzzi, MEIER, p. 161, t. c. n. sp.
- Trichochrysea severini*, Bengal, JACOBY, p. 109, Mem. Soc. ent. Belgique vii, n. sp.
- Tricliona indica, levicollis*, India, JACOBY, p. 110, t. c. n. spp.
- Xanthonia nigripennis*, India, JACOBY, p. 100, Mem. Soc. ent. Belgique vii, n. sp.
- Zeugophora anchora*, Centr. Asia, p. 164, pl. i, fig. 9, with var. *pseudancora*, p. 165, REITTER, Wien. ent. Zeit. xix, n. sp.

### EROTYLIDÆ (incl. LANGURIIDÆ).

[Cf. GORHAM (512, 513), HELLER (573), REITTER (1099).]

- Amblyopus hæmorrhous* referred to *Amblyscelis*, habitat queried, GORHAM, p. 90, Ann. Nat. Hist. v.
- Amblyscelis nigrinus*, Natal, *conradti*, W. Africa, p. 88, *brunneus*, Natal, p. 89, GORHAM, t. c. n. spp.
- Anadastus lorianus*, p. 361, *haroldi*, p. 362, *gagaticeps*, p. 364, New Guinea, GORHAM, Ann. Mus. Genova xl, n. spp.
- Callitanguria asymmetrica*, Celebes, HELLER, p. 5, pl. fig. 3, Abh. Mus. Dresden ix, No. 5, n. sp.

- Crotchchia fusiformis*, Paraguay, *balsanii*, Bolivia, GORHAM, p. 397, Ann. Mus. Genova xl, n. spp.  
*Cyrtengis* n. g. near *Dacne*, for *C. testacea* n. sp., Buchará, REITTER, p. 51, Deutsche ent. Zeitschr. 1900.  
*Dasydactylus solarii*, Nicaragua, GORHAM, p. 365, Ann. Mus. Genova xl, n. sp.  
*Lacertobelus* n. g. near *Fatua*, for *L. dentipes*, p. 358, *longimanus*, p. 360, n. spp., Sumatra, GORHAM, t. c.  
*Languriosoma thoracica*, N. Guinea, GORHAM, p. 360, t. c. n. sp.  
*Lophocrotaphus* n. g. p. 91, near *Amblyopus*, for *L. guineensis* n. sp., Africa, p. 92, GORHAM, Ann. Nat. Hist. v.  
*Neocoptengis* n. g. for *N. cyanipes* n. sp., Celebes, HELLER, p. 6, pl. fig. 2, Abh. Mus. Dresden ix, No. 5.  
*Promecolanguria marshalli*, *trogositoides*, Natal, GORHAM, p. 87, Ann. Nat. Hist. v, n. spp.  
*Pycnogeusteria* n. g., p. 90, near *Amblyopus*, for *P. kraatzi* n. sp., W. Africa, GORHAM, p. 91, t. c.  
*Tetralanguria elongata*, variation, GORHAM, p. 356, Ann. Mus. Genova xl.  
*Tritoma jakolevi* = (*subbasalis* Reitt.), MÜLLER, p. 23, Wien. ent. Zeit. xix.  
*Zythonia anthracina*, Congo, GORHAM, p. 92, Ann. Nat. Hist. v, n. sp.

## ENDOMYCHIDÆ.

[Cf. CSIKI (298, 301, 302), GAHAN (478), GORHAM (512).]

- Stridulating organs, GAHAN (478), pp. 435-437.  
*Ancylopus nigrofuscus*, Natal, GORHAM, p. 93, Ann. Nat. Hist. v, n. sp.  
*Dapsa opuntiae* var. n., *sahlbergi*, REITTER, p. 219, Wien. ent. Zeit. xix.  
*Encymon erimæ*, New Guinea, CSIKI, p. 123, Termes. Fuzetek xxiii, n. sp.  
*Gibbiger* subg. n. of *Milichius* for *M. fasciatus* Heller, CSIKI, p. 377, t. c.  
*Haploscelis nitidus*, *nossibeanus*, p. 400, *madecassus*, p. 401, Madagascar, CSIKI, t. c. n. spp.  
*Milichius javanicus*, Java, CSIKI, p. 376, t. c. n. sp.  
*Mycetina cruciata* var. n. *balkanica*, CSIKI, p. 401, t. c.  
*M. montivaga*, Darjiling, id., l. c. n. sp.  
*Stenotarsus* n. g. for Asiatic and Australian *Stenotarsus*, with *S. quadrimaculatus*, Australia, p. 401, *pulcher*, *flavotestaceus*, New Guinea, p. 402, n. sp., CSIKI, t. c.  
*Stenotarsus biroi*, New Guinea, CSIKI, p. 124, t. c. n. sp.  
*Trycherus elegans*, Cameroons, CSIKI, p. 400, t. c. n. sp.

## COCCINELLIDÆ.

[Cf. ARROW (36), BLACKBURN (123), BORDAS (144), FLEISCHER (423, 426), JACOBSON (641), PIC (1031), SEMENOW (1196), WEISE (1395, 1396, 1399, 1400).]

- The colour-markings, ontogeny, phylogeny, JACOBSON (641).  
 Food-habits of *Coccinellidæ*; correction of erroneous statements, WEISE, pp. 297-301, Deutsche ent. Zeitschr. 1900.  
*Adonia arctica* var. n. *caucasica*, FLEISCHER, p. 116, Wien. ent. Zeit. xix;  
*A. variegata*, habits, variation, WEISE, p. 122, Deutsche ent. Zeitschr. 1900.  
*Alesia annulata* var. *bimaculata*, CANNAVIELLO, p. 303, Bull. Soc. ent. Ital. xxxii.  
*Aspidimerini*; characters and components, WEISE, pp. 426, 427, Deutsche ent. Zeitschr. 1900.

- Aspidimerus circumflexus* var., WEISE, p. 423, t. c.  
*A. horni*, Ceylon, id. p. 424, t. c. n. sp.  
*Autotela* n. g. near *Celophora*, p. 125, for *A. picticollis*, p. 126, *cincta*, p. 127, *vittula*, *nigra*, p. 128, n. spp., E. Africa, WEISE, t. c.  
*Brunus* 8-signatus var. n. *conjunctus*, FLEISCHER, p. 118, Wien. ent. Zeit. xix.  
*B. mongolicus*, Mongolia, FLEISCHER, l. c.; *B. ceylonicus*, Trincomalee, WEISE, p. 421, Deutsche ent. Zeitschr. 1900 : n. spp.  
*Chilocorus tibialis*, larva, WEISE, p. 129, Deutsche ent. Zeitschr. 1900.  
*C. bennigseni*, E. Africa, WEISE, p. 128, t. c. n. sp.  
*Clanini*; characters and components, WEISE, pp. 430–433, t. c.  
*Clanis pilosula*, p. 429, *opaca*, p. 430, Ceylon, WEISE, t. c. n. spp.  
*Coccidula rufa* var. n. *nigropunctata*, REITTER, p. 220, Wien. ent. Zeit. xix.  
*Coccinella* 11-punctata var. n. *ocellata*, CHURCHEVILLE, p. 26, Miscell. ent. viii; *C. 14-pustulata* var. n. *turkestanica*, FLEISCHER, p. 116, Wien. ent. Zeit. xix; *C. sinuato-marginata* var. n. *trilobata*, FLEISCHER, p. 245, t. c.; *C. distincta*, habits, DONISTHORPE, p. 173, Ent. Rec. xii.  
*C. bodemeyeri*, Asia Minor, WEISE, p. 166, Bodemeyer (131), and p. 140, Deutsche ent. Zeitschr. 1900; *C. mombonensis*, Africa, WEISE, p. 123, t. c. : n. spp.  
*Cryptogonus orbiculus* and *fulvocinctus* var., WEISE, pp. 424, 425, t. c.  
*Cydonia zonata*, p. 123, *angulifera*, p. 124, E. Africa, WEISE, t. c. n. spp.  
*Dionus rubidus* var. n. *morio*, FLEISCHER, p. 120, Wien. ent. Zeit. xix.  
*Dysis orientalis*, E. Africa, WEISE, p. 125, Deutsche ent. Zeitschr. 1900, n. sp.  
*Empia vittata*, Ceylon, WEISE, p. 444, t. c. n. sp.  
*Epilachna bisseptemnotata* = (*schoensis* Gorh.), *E. godarti* characters, WEISE, p. 115, t. c.; *E. tarda*, *morosa*, p. 114, *severini*, p. 115, E. Africa, WEISE, t. c.; *E. khasiensis*, India, p. 417, *misera*, Ceylon, p. 420, WEISE, t. c.; *E. nativitatis*, Christmas Is., ARROW, p. 95, pl. x, fig. 6, Monogr. Christmas Island : n. spp.  
*Epismilia* n. n. for *Smilia* Weise, COCKERELL, Sci. Gossip 1900, p. 606.  
*Exochomus puniceipennis*, Buchara, SEMENOW, p. 684, Horæ Soc. ent. Ross. xxxiv, n. sp.  
*Halysia 14-guttata* var. n. *nigripennis*, FLEISCHER, p. 117, Wien. ent. Zeit. xix.  
*H. reitteri*, Margelan, FLEISCHER, p. 117, t. c. n. sp.  
*Hippodamia 7-maculata* var. n. *equiseti*, MEIER, p. 78, Ent. Nachr. xxvi.  
*Horniolus* n. g. near *Nephus*, p. 442, for *H. dispar*, n. sp. Ceylon, p. 443, WEISE, Deutsche ent. Zeitschr. 1900.  
*Hyperaspis transversoguttata* var. n. *10-guttata*, *H. desertorum* var. n. *collaris*, FLEISCHER, p. 119, t. c.  
*Nephus spilotus*, Irkutsk, *patruus*, Ceylon, WEISE, p. 441, Deutsche ent. Zeitschr. 1900, n. spp.  
*Notolipernes* n. n. for *Lipernes* Blackb. nec Waterh., BLACKBURN, p. 68, Tr. R. Soc. S. Austral. xxiv.  
*Ortalia 12-maculata*, W. Africa, WEISE, p. 129, Deutsche ent. Zeitschr. 1900; *O. horni*, p. 433, *minuta*, p. 434, Ceylon, WEISE, t. c.; *Pharus numidicus* (Sicard), Algeria, PIC, p. 91, Echange xvi, n. sp.; *P. horni*, Ceylon, WEISE, p. 434, Deutsche ent. Zeitschr. 1900 : n. spp.  
*Platynaspis ceylonica*, Ceylon, WEISE, p. 422, t. c. n. sp.  
*Pullus victoris* var. *obsignatus*, WEISE, p. 435, t. c.  
*P. severus*, E. Africa, WEISE, p. 131, t. c.; *P. musculus*, p. 438, *gratiosus*, p. 439, Ceylon, WEISE, t. c. n. spp.  
*Rodolia ferruginea*, p. 130, *pivicollis*, p. 131, E. Africa, WEISE, t. c. n. spp.  
*Scotoscymnus* n. n. for *Scymnomorphus* Weise nec Bl., WEISE, p. 458, Deutsche ent. Zeitschr. 1900.

- Scymnus rubromaculatus* var. *triangulifer*, *S. dorsalis* n. n. for *mongolicus*, infra, FLEISCHER, p. 235, Wien. ent. Zeit. xix; *S. frontalis* var. n. *4-guttatus*, FLEISCHER, p. 120, t. c.  
*S. (Pullus) mongolicus*, Mongolia, FLEISCHER, p. 119, t. c.; *S. (Nephus) crucifer*, Bucharâ, FLEISCHER, p. 235, t. c. n. spp.  
*Semichnoodes ceylonica*, Ceylon, WEISE, p. 428, Deutsche ent. Zeitschr. 1900, n. sp.  
*Solanophila firma*, *semmiona*, p. 117, *spretula*, p. 118, *soluta*, p. 119, Africa, WEISE, t. c. n. spp.  
*Sticholotis horni*, Ceylon, WEISE, p. 429, t. c. n. sp.  
*Tropha* n. g. near *Solanophila*, p. 121, for *T. variabilis*, p. 122, n. sp., East Africa, p. 122, WEISE, t. c.

## CORYLOPHIDÆ and PSEUDOCORYLOPHIDÆ.

[Cf. CASEY (229), DODERO (336), REITTER (1101).]

Classification and revision of N. American, CASEY, pp. 60–75, J. N. York Ent. Soc. viii.

*Anisomeristes masoni* n. n. for *A. basalis* Matth. nec Sharp, REITTER, p. 132, Wien. ent. Zeit. xix.

*Aphanocephalus hemisphaericus* var. *birmanicus*, DODERO, p. 565, Ann. Mus. Genova xl.

*A. fœæ*, Burma, id. p. 566, t. c. n. sp.

*Arthrolips nimius*, p. 72, *cinctus*, *sparsus*, p. 73, N. America, CASEY, J. N. York Ent. Soc. viii, n. spp.

*Bathona* n. g. for *B. carolinæ*, *virginica*, *convexa*, *sphaericula*, n. spp., N. America, CASEY, t. c.

*Clypeastodes* n. g. for *Clypeaster maderæ* Kr., CASEY, p. 70, t. c.

*Corylophodes impunctatus*, *subtropicus*, N. America, CASEY, p. 63, t. c. n. spp.

*Eutrilia* n. g., p. 65, for *E. brunnea*, n. sp., California, p. 66, CASEY, t. c.

*Gronovus* n. g., p. 63, for *G. sticticus*, *fascicornis*, *hesperus*, *lævis*, n. spp., N. America, p. 64, and *truncatus* Lec., CASEY, t. c.

*Molamba* n. g. for part of *Sacium*, with *M. obesa*, *specularis*, *parvula*, *ornata*, p. 71, *decora*, p. 72, n. spp., N. America, CASEY, t. c.

*Orthoperus princeps*, p. 66, *texanus*, *micros*, *arizonicus*, *alutaceus*, N. America, *bahamicus*, Bahamas, p. 67, CASEY, t. c. n. spp.

*Rypobius minutus*, Texas, CASEY, p. 65, t. c. n. sp.

*Sacium formosum*, note on, DODERO, p. 565, Ann. Mus. Genova xl.

*S. montanum*, *nigrum*, N. America, CASEY, p. 70, J. N. York Ent. Soc. viii, n. spp.

*Sericoderus chobauti*, S. France, REITTER, p. 82, Deutsche ent. Zeitschr. 1900; *S. quadratus*, p. 68, *debilis*, p. 69, N. America, CASEY, J. N. York Ent. Soc. viii : n. spp.



(B.) *HYMENOPTERA.*

The superfamilies, pp. 2-4, the families, pp. 190-205, of *Hymenoptera*; ASHMEAD, P. U. S. Mus. xxiii.

ASHMEAD continues his papers on the classification of the Order, dealing with his superfamily Vespoidæ, which includes not only *Diploptera*, but also *Pompilidæ*, *Chrysididæ*, *Bethylidæ*, *Trigonidæ*, and the *Scolioid* families of *Fossoria*, Canad. Ent. xxxii.

The *Hymenoptera* of the W. Indies, 1290 species, ASHMEAD (40).

Anatomy and development of male armature; nomenclature of parts; supposed male and female homologies, ZANDER (1422).

Fat-body and oenocytes of *Apis*, KOSCHEVNIKOV (759).

Parthenogenesis of honey-bee, WEISMANN (1404).

*ACULEATA.**APIDÆ.*

[The following memoirs relate to *Apidæ*, viz.:—ALFKEN (15-19, 21), ASHMEAD (40), BUTTEL-REEPEN (212, 213), BUYSSON (216, 218), CAMERON (223), COCKERELL (271-277, 279), DUCKE (351), FREY-GESSNER (448), FRIESE (449-458), GALE (483), KIRBY (723, 724), KOSCHEVNIKOV (759), KRIECHBAUMER (783), LIE-PETTERSEN (823), LUDWIG (837), MICHAELIS (908), PERKINS (991), ROBERTSON (1123), SAUNDERS (1148), SCHMIEDEKNECHT (1155), STOYEL (1286), TITUS (1324), WEISMANN (1404).]

Visits of bees to flowers in Europe and N. America, LUDWIG (837).

Male copulatory organs of *Apis mellifica*, MICHAELIS (908).

*Agapostemon*; characters of species found in Colorado, TITUS, pp. 303, 304, Canad. Ent. xxxii.

*A. semimelleus, chapadensis*, Brazil, COCKERELL, p. 376, P. Ac. Philad. 1900, n. spp.

*Andrena nyctemera*, habits, habitat, PIGEOT, p. 186, Bull. Soc. ent. France 1900; *A. apacheorum* var., COCKERELL, p. 403, Ann. Nat. Hist. v.

*A. porterae*, p. 401, *xanthigera*, p. 402, *albavirgata*, p. 403, *segregans*, p. 404, *nitidior*, p. 406, *semirufa*, p. 407, New Mexico, COCKERELL, Ann. Nat. Hist. v; *A. sapellonis*, New Mexico, COCKERELL, p. 19, t. c. : n. spp.

*Anthidium*; subg. n. *Dianthidium* q. v.

*A. porterae*, New Mexico, COCKERELL, p. 411, Ann. Nat. Hist. v, n. sp.

*Anthophora bomboidea* var. n. *neomexicana*, COCKERELL, p. 408, t. c.

*A. porterae*, New Mexico, COCKERELL, p. 407, t. c. n. sp.

*Anthophorula* Cock. merged in *Exomalopsis*, FRIESE, p. 247, Ann. Hofmus. Wien xiv.

*Anthrena nigriceps* and allies, characters, ALFKEN, pp. 3-7, Ent. Nachr. xvi; *A. compta* ♂, SCHMIEDEKNECHT, p. 228, Termes. Fuzetek xxiii.

*A. bremensis*, Germany, ALFKEN, p. 6, Ent. Nachr. xvi; *A. berenice*, p. 220, *isis*, *arsinoë*, p. 221, *argyrofasciata*, p. 222, *maræ*, p. 223, *kamarti*, p. 224, *dido*, p. 225, *tunetana*, p. 226, *smaragdina*, p. 227,

- byrsicola*, p. 228, N. Africa, SCHMIEDEKNECHT, Termes. Fuzetek xxiii; *A. consimilis*, p. 177, *knuthi*, p. 178, *japonica*, p. 179, Japan, ALFKEN, Ent. Nachr. xxvi : n. spp.
- Augochlora vesta* var. n. *cupreola*, p. 363, *A. calypso* subsp. n. *cupreotincta*, *eucalypto*, p. 364, *A. titania* Sm. referred to *Corynura*, p. 376, COCKERELL, P. Ac. Philad. 1900.
- A. cyaneoviridis, claviventris*, St. Vincent, ASHMEAD, p. 217, Tr. ent. Soc. London 1900; *A. spinola*, p. 357, *polychroa, smithiana*, p. 358, *heterochroa*, p. 359, *goeldii, wallacei*, p. 360, *chapada*, p. 361, *brasiliensis*, p. 362, *monochroa*, p. 364 with subsp. *moreira*, p. 365, *janeirensis*, p. 366, *mulleri*, p. 367, *callichroa*, p. 368, *iheringi, cerulitor*, p. 369, *batesi, belti*, p. 370, *foziana*, p. 371, with var. *perimela*, p. 372, Brazil, COCKERELL, P. Ac. Philad. 1900 : n. spp.
- Bicornelia* n. g. near *Caupolicana*, p. 239, for *B. serrata*, n. sp., Mexico, p. 240, FRIESE, Ann. Hofmus. Wien xiv.
- Bombomelecta larrea*, New Mexico, COCKERELL, p. 361, Canad. Ent. xxxii, n. sp.
- Bombus soroensis*, variation, ALFKEN, pp. 184-190, Ent. Nachr. xxvi; *B. proximus* and var. *howardi*, COCKERELL, p. 401, Ann. Nat. Hist. v; *B.* and *Psithyrus* in N. Norway, LIE-PETTERSEN (823).
- Calliopsis coloradensis coloratipes* (= *C. flavifrons coloratipes*), ♀ described, COCKERELL, p. 64, Entomologist xxxiii.
- Campoptæum handlirschi*, Biskra, FRIESE, p. 86, Ent. Nachr. xxvi, n. sp.
- Caupolicana* (= *Megaciliusa*), COCKERELL, p. 570, Ent. News Philad. xi.
- C. peruviana*, Peru, FRIESE, p. 180, Ent. Nachr. xxvi; *C. bicolor*, p. 242, *adusta*, p. 243, Chili, FRIESE, Ann. Hofmus. Wien xiv : n. spp.
- Centris atra* ♂, id. t. c., p. 118.
- Centris atra*, Brazil, *clypeata, sericea*, Mexico, *lateritia*, p. 41, *mocsaryi, scopipes, rufipes, bucephala*, p. 42, *lutea, femoralis, smithii*, p. 43, S. America, *birkmannii, limbata*, Texas, *breviceps*, Amazons, *labrosa*, Centr. America, p. 44, *proxima, nigripes, tricolor, klugii*, p. 45, *inermis, flavothoracica*, p. 46, *pseudoephippia, ruficauda, intermixta, caelebs, flavohirta, nigrofasciata*, p. 47, *niveofasciata, minor*, p. 48, S. America, FRIESE, Termes. Fuzetek xxiii; *C. weilenmanni, pauloensis*, p. 117, *horvathi*, p. 118, FRIESE, t. c. : n. spp.
- Ceratina bifida*, Asia Minor, FRIESE, p. 86, Ent. Nachr. xxvi; *C. madecassa*, Nossi-Bé, FRIESE, p. 262, Abh. Senckenb. Ges. xxvi; *C. nigrita*, St. Vincent, ASHMEAD, p. 212, Tr. ent. Soc. London 1900 : n. spp.
- Chrysanthoda trochanterica*, Brazil, FRIESE, p. 66, Ent. Nachr. xxvi, n. sp.
- Calioxys*; characters of New Mexican, COCKERELL, pp. 297-301, Canad. Ent. xxxii; *C. octodentata*, host is *Megachile mendica*, Fox, Ent. News Philad. xi.
- C. (lucrosa* var. ?) *portera*, p. 298, *apacheorum*, p. 299, *grindelia*, p. 300, *ribis*, p. 301, New Mexico, COCKERELL, Canad. Ent. xxxii : n. spp.
- Colletes*; deep burrows, SMITH, p. 208, J. N. York Ent. Soc. viii; *C. propodis*, ♀, COCKERELL, p. 244, Entomologist xxxiii.
- C. graeffei*, Centr. Europe, p. 74, *seitzii*, Yokohama, p. 76, ALFKEN, Ent. Nachr. xxvi; *C. inconspicua*, Abd-el-Kuri, KIRBY, p. 23, Bull. Liverp. Mus. iii; *C. nigrifrons*, Colorado, TITUS, p. 304, Canad. Ent. xxxii; *C. algarobie*, New Mexico, COCKERELL, p. 244, Entomologist xxxiii; *C. nitidicollis*, p. 182, *rugicollis*, p. 183, *murinus*, p. 184, S. America, FRIESE, Ent. Nachr. xvi : n. spp.
- Crocisa forbesii, uniformis*, Sokotra, KIRBY, p. 21, Bull. Liverp. Mus. iii, n. spp.
- Dasypoda schlettereri*, S. E. Europe, FRIESE, p. 87, Ent. Nachr. xxvi, n. sp.
- Dianthidium* subg. n. of *Anthidium* for *A. curvatus* ~~Stn.~~ and a N. American species, COCKERELL, p. 4

- Dufourea alboclypeata*, Egypt, FRIESE, p. 86, Ent. Nachr. xxvi; *D. subcyanea*, St. Vincent, ASHMEAD, p. 215, Tr. ent. Soc. London 1900 : n. spp.
- Epeolus occidentalis* var. n. *segregatus*, p. 361, *E. remigatus* var. *martini*, p. 362, COCKERELL, Canad. Ent. xxxii.
- E. rufotegularis* Grenada, ASHMEAD, p. 211, Tr. ent. Soc. London 1900, n. sp.
- Epicharis maculata* varr. n. *nigroclypeata*, *grandior*, FRIESE, p. 40, Termes. Fuzetek xxiii.
- E. cockerelli*, Brazil, FRIESE, p. 119, t. c.; *E. albifacies*, *lindigii*, *schrottkyi*, p. 39, *obscura*, (♂, p. 119), *iheringii*, *metatarsalis*, p. 40, S. America, FRIESE, t. c. n. spp.
- Euclera difficilis*, habits, ALFKEN, Ent. Nachr. xxvi, p. 157.
- Euglossa*: remarks on 6 species as supplement to the 1899 paper, FRIESE, pp. 121, 122, Termes. Fuzetek xxiii.
- Exomalopsis*, monograph, FRIESE, pp. 247-270, Ann. Hofmus. Wien xiv.
- E. aureoserica*, Brazil, p. 253, *collaris*, *tomentosa*, p. 254, *texana*, p. 264, Texas, *E. chilensis*, Chili, *E. latitarsis*, p. 266, *nigripes*, *chalybea*, p. 267, Brazil, *serrata*, Mexico, p. 270, FRIESE, t. c. n. spp.
- Fidelia* n. g. near *Podalirius*?, p. 244, for *F. paradoxa*, n. sp., S. Africa, p. 245, FRIESE, t. c.
- Halictus aquila*, ♂, COCKERELL, p. 415, Ann. Nat. Hist. v.
- H. flavovittatus*, Sokotra, KIRBY, p. 20, Bull. Liverp. Mus. iii; *H. decemmaculatus*, Nossi-Bé, FRIESE, p. 265, Abh. Senckenb. Ges. xxvi; *H. andrewsi*, fig. 8, *binghami*, p. 9, pl. xiv, KIRBY, p. 86, Monogr. Christmas Island; *H. cyaneus*, p. 219, *plumbeus*, *auratus*, *sancti-vicenti*, p. 220, St. Vincent, ASHMEAD, Tr. ent. Soc. London 1900; *H. huttoni*, New Zealand, CAMERON, p. 17, Tr. N. Zealand Inst. xvii : n. spp.
- Hyleosoma longiceps*, St. Vincent, ASHMEAD, p. 215, Tr. ent. Soc. 1900, n. sp.
- Hypomacrotera callops* var. n. *persimilis*, COCKERELL, p. 64, Entomologist xxxiii.
- Koptorthosoma* sp. from New Britain, SHARP, p. 388, Willey Results iv.
- Lithurgus gibbosus*, *L. compressus* Sm. is the ♂, COCKERELL, p. 487, Amer. Natural. xxxiv.
- Megachile*: the New Mexican species, revised, COCKERELL, pp. 7-18, Ann. Nat. Hist. vi.
- M. punctatissima*, p. 20, *paucipunctulata*, p. 21, Sokotra, KIRBY, Bull. Liverp. Mus. iii; *M. sikora*, Madagascar, VOELTZKOW, p. 261, Abh. Senckenb. Ges. xxvi; *M. rotundipennis*, p. 87, *nivescens*, p. 88, Christmas Is., KIRBY, Monogr. Christmas Island; *M. neoberryae*, New Mexico, COCKERELL, p. 244, Entomologist xxxiii; *M. sapellonis*, p. 7, *monardarum*, p. 11, *soledadensis*, p. 12, *cleomis*, p. 13, *prosopidis*, p. 16, *chilopsidis*, *populi*, p. 17, *vallorum*, *heterodonta*, p. 18, New Mexico, COCKERELL, Ann. Nat. Hist. vi; *M. tridentata*, p. 213, *minima*, p. 214, St. Vincent, ASHMEAD, Tr. ent. Soc. London 1900 : n. spp.
- Megacilissa tomentosa* var. n. *steinheili*, FRIESE, p. 244, Ann. Hofmus. Wien xiv.
- M. magretti*, Venezuela, FRIESE, p. 243, Ann. Hofmus. Wien xiv; *M. (Ptiloglossa) virgili*, p. 180, *tarsata*, p. 181, S. America, FRIESE, Ent. Nachr. xxvi : n. spp.
- Megalopta* (*Megaloptidia* subg. n.) *contradicta*, Santarem, COCKERELL, p. 373, P. Ac. Philad. 1900, n. sp.
- Megaloptidia* subg. n. cf. *Megalopta*.
- Melipona nigripes*, Guatemala, *lunulata rufescens*, *nigrescens*, p. 381, *eburnea*, *rufipes*, *flavolineata*, *fuscipes*, *peruviana*, p. 382, *cerulea*, p. 394, S. America, FRIESE, Termes. Fuzetek xxiii, n. spp.
- Melissa imperialis*, St. Vincent, ASHMEAD, p. 211, Tr. ent. Soc. London

- 1900; *M. diabolica*, p. 65, *maculata*, *cærulea*, *violacea*, *viridis*, p. 66, Brazil, FRIESE, Ent. Nachr. xxvi : n. spp.
- Melissodes trifasciatella*, St. Vincent, ASHMEAD, p. 210, Tr. ent. Soc. London 1900, n. sp.
- Melitta hispanica*, Barcelona, *albofasciata*, Turkestan, *tomentosa*, Fiume, p. 85, FRIESE, Ent. Nachr. xxvi, n. spp.
- Nomada atrata* Sm. = (*brevicornis* Schmied.), SAUNDERS, p. 204, Ent. Mag. xxxvi.
- N. illinoensis*, *parva*, Illinois, ROBERTSON, p. 294, Canad. Ent. xxxii; *N. xanthophila*, New Mexico, COCKERELL, p. 415, Ann. Nat. Hist. v : n. spp.
- Nomia viridilimbata* ♂ ♀, BUYSSON, p. 178, Ann. Soc. ent. France lxix.
- Nomia saussurei*, Nossi-Bé, FRIESE, p. 263, Abh. Senckenb. Ges. xxvi : n. sp.
- Osmia*; monograph of palaearctic, DUCKE, Ber. Ver. Innsbruck xxv; *O. parietina* Curt. = (*angustula* Zett.), characters, SAUNDERS, p. 51, Ent. Mag. xxxvi; *O. lignaria* var., p. 409, *O. nigrifrons* var. n. *subaustralis*, p. 410, COCKERELL, Ann. Nat. Hist. v; *O. longispina* sexes, nesting, pl. x, p. 666, R. du BUYSSON, Ann. Soc. ent. France lxviii.
- O. purpurata*, p. 134, *epeoliformis*, p. 145, Algeria, *magretti*, Milan, p. 205, *leucopyga*, Algeria, p. 223, *saxicola*, Trieste, p. 226, *friesiana*, p. 249, *alfkenii*, p. 263, Algeria, *kohlii*, Sicily, p. 271, DUCKE, Ber. Ver. Innsbruck xxv; *O. pulsata*, Tunis, BUYSSON, p. 668, Ann. Soc. ent. France lxviii; *O. (Melanosmia) ribifloris*, New Mexico, COCKERELL, p. 410, Ann. Nat. Hist. v : n. spp.
- Oxæa rufa*, Brazil, FRIESE, p. 244, Ann. Hofmus. Wien xiv, n. sp.
- Pachyosmia* subg. n. of *Osmia*, for *emarginata* etc., DUCKE, p. 18, Ber. Ver. Innsbruck xxv.
- Panurginus porterae*, New Mexico, COCKERELL, p. 364, Canad. Ent. xxxii, n. sp.
- Perdita baccharidis*, p. 61, *melina*, *heterotheca*, p. 62, Arizona, *heliotropii*, Chihuahua, p. 63, COCKERELL, Entomologist xxxiii, n. spp.
- Podalirius fulvictectus*, *antennatus*, Sokotra, p. 22, *pyramidalis*, Abd-el-Kuri, p. 23, KIRBY, Bull. Liverp. Mus. iii, n. spp.
- Prosopis*: the species of N. W. Germany, table of characters and remarks, ALFKEN (21).
- P. palustris*, England, PERKINS, p. 49, Ent. Mag. xxxvi; *P. helvetica*, p. 228, *tristis*, p. 230, Switzerland, FREY-GESSNER, Mt. Schweiz. ent. Ges. x : n. spp.
- Protosmia* subg. n. of *Osmia*, for *O. glutinosa* etc., DUCKE, p. 12, Ber. Ver. Innsbruck xxv.
- Ptilothrix nigrula*, *P. ? similis*, Brazil, FRIESE, p. 272, Ann. Hofmus. Wien xiv, n. spp.
- Rathymus michaelis*, *armatus*, S. America, FRIESE, p. 65, Ent. Nachr. xxvi, n. spp.
- Rhopites foveolatus*, Greece, FRIESE, p. 85, t. c. n. sp.
- Sphecodes fortior*, relations with *Anthidium parosæ*, NEWBERRY, p. 94, Psyche ix.
- S. nigratus*, *solitarius*, p. 221, *thoracicus*, p. 222, St. Vincent, ASHMEAD, Tr. ent. Soc. London 1900, n. spp.
- Tetralonia duplofasciata*, Colombia, KRIECHBAUMER, p. 106, pl. i, fig. 6, Berlin. ent. Zeitschr. xlv, n. sp.
- Tetrapedia*; monograph, FRIESE, pp. 274, 303, Ann. Hofmus. Wien xiv.
- T. rugulosa*, *peckoltii*, p. 282, *curvitaris*, *amplitaris*, p. 283, *dyspeata*, *pyramidalis*, p. 285, *bunchosia*, p. 286, *glaberrima*, *nigripes*, p. 287, *serraticornis*, p. 288, *picta*, p. 290, *muelleri*, *maculata*, n. sp. *ventris*, p. 292, *piliventris*, p. 293, *goeldiana*, *antennata*, p. 297, *ferruginea*, *globulosa*, p.

- pennis*, p. 299, *elongata*, *klugi*, p. 300, *saussurei*, with varr. *griseus* and *fusciventris*, Mexico, p. 301, FRIESE, t. c. n. spp.
- Thrausmus* n. g. *Andrenides* parasitic, for *T. grandidieri* n. sp., Madagascar, BUYSSON, p. 177, Ann. Soc. ent. France lxi.
- Trigona* sp., nest from Singapore, WATERHOUSE, p. v, P. ent. Soc. London 1900.
- T. voeltzkowi*, Madagascar, FRIESE, p. 260, Abh. Senckenb. Ges. xvi; *T. tomentosa*, *conradi*, *langhofferi*, *lendliana*, *cameroonensis*, p. 383, *buschirii*, *hildebrandti*, *magretti*, Africa, *latipes*, Malacca, p. 384, *fuscipennis*, Guatemala, *lacteipennis*, *fulvohirta*, *helleri*, p. 385, *duckei*, *muelleri*, *schrottkyi*, S. America, *schulthessi*, Guatemala, p. 386, *nigri-facies*, *kohli*, *braueri*, *dallatorreana*, p. 387, *williana*, *latitarsis*, p. 388, *flaveola*, *obscura*, *rhumbleri*, *heideri*, S. America, *hellwegeri*, Mexico, p. 389, *goettei*, *mocsaryi*, *doederleini*, p. 390, *ziegleri*, *handlirschi*, *droryana*, *goldiana*, p. 391, *saigui*, *emerina*, S. America, *voeltzkowi*, Madagascar, p. 392, *alfkeni*, *hackeli*, *butteli*, *franki*, *graffei*, p. 393, *porti*, p. 394, S. America, FRIESE, Termes. Fuzetek xxiii; *T. nigrocyanea*, St. Vincent, ASHMEAD, p. 208, Tr. ent. Soc. London 1900 : n. spp.
- Xenoglossa patricia* var. n. *angustior*, COCKERELL, p. 64, Entomologist xxxiii.
- Xylocopa cantabrita* ♂, ALFKEN, p. 77, Ent. Nachr. xxvi.
- X. rogenhoferi*, Persia, *wagneri*, China, FRIESE, p. 86, Ent. Nachr. xxvi; *X. tricuspidifera*, Peru, KRIECHBAUMER, p. 106, pl. i, fig. 7, Berlin. Ent. Zeitschr. xlv : n. spp.

#### VESPIDÆ (incl. EUMENIDÆ).

- [Cf. ASHMEAD (40, 41), BERG (99), CAMERON (222), KINCAID (712), KIRBY (723), KRIECHBAUMER (783), RUDOW (1142), SAUSSURE (1149), SCHMIDDEKNECHT (1156).]
- Biology of Madagascar wasps ; peculiarity of colour, and of forms of nests, SAUSSURE (1149).
- The nests of wasps, RUDOW (1142).
- Belonogaster*, nests, SAUSSURE, p. 206, Abh. Senckenb. Ges. xxvi.
- B. apicalis*, *bicolor*, p. 208, *pomicolor*, *ornatus*, p. 209, *malagassus*, p. 210, Madagascar, SAUSSURE, t. c. n. spp.
- Eumenes granti*, Sokotra, KIRBY, p. 18, Bull. Liverp. Mus. iii; *E. sakalavus*, Madagascar, SAUSSURE, p. 235, Abh. Senckenb. Ges. xxvi : n. spp.
- Icaria*, nests, SAUSSURE, p. 212, Abh. Senckenb. Ges. xxvi; *I. ferruginea* ♂, CAMERON, p. 495, Ann. Nat. Hist. vi.
- I. grossepunctata*, Sokotra, p. 20, *aterrima*, Abd-el-Kuri, p. 23, KIRBY, Bull. Liverp. Mus. iii; *I. prasina*, *regina*, p. 220, *pulchella*, p. 223, *fraterna*, *interjecta*, p. 225, *ducalis*, p. 226, *sakalava*, p. 228, *venustula*, p. 231, Madagascar, SAUSSURE, t. c.; *I. quadrimaculata*, *ornaticeps*, p. 496, *rufocollaris*, p. 497, *nigroplagiata*, p. 498, *carinata*, p. 499, *wroughtoni*, p. 500, *fuscipennis*, p. 501, *tinctipennis*, p. 503, *fulvinerva*, p. 504, India, CAMERON, Ann. Nat. Hist. vi : n. spp.
- Labus armatus*, Khasia Hills, CAMERON, p. 536, t. c. n. sp.
- Monobia insularis*, Grenadines, ASHMEAD, p. 233, Tr. ent. Soc. London 1900, n. sp.
- Montezuma bisulcata*, Khasia Hills, CAMERON, p. 535, Ann. Nat. Hist. vi, n. sp.
- Odynerus labiatus*, *vespiformis*, characters, habitat, BERG, pp. 237-240, Comun. Mus. Buenos Aires i; *O. andreanus* ♂, BUYSSON, p. 178, Ann. Soc. ent. France lxi.



- O. (Microdynerus) osiris*, p. 229, *O. (Hoplomerus) hamilar*, p. 230, *hadrubal*, p. 231, N. Africa, SCHMIEDEKNECHT, Termes. Fuzetek xxiii; *O. malagassus*, p. 237, *kova*, p. 238, Madagascar, SAUSSURE, Abh. Senckenb. Ges. xxvi; *O. hindostanus*, p. 504, *antoni*, p. 505, India, CAMERON, Ann. Nat. Hist. vi; *O. sancti-vicenti*, St Vincent, p. 233, *grenadensis*, Grenada, p. 234, ASHMEAD, Tr. ent. Soc. London 1900; *O. magdalenæ*, Colombia, KRIECHBAUMER, p. 105, pl. i, fig. 8, Berlin. ent. Zeitschr. xlv : n. spp.
- Polistes*, aberrant oviposition, SHARP, p. 388, pl. xxxv, fig. 14, Willey Results iv.
- P. rothneyi*, p. 410, *rufolineatus*, p. 411, *rugifrons*, p. 412, *khasianus* ♀, *nigrilarsis*, p. 413, *ephippium*, *khasianus* ♂, p. 415, *wattii*, p. 416, *japonicus*, p. 417, *erythrocerus*, p. 418, Japan, CAMERON, Ann. Nat. Hist. vi; *P. sikora*, Madagascar, SAUSSURE, p. 233, Abh. Senckenb. Ges. xxvi : n. spp.
- Pterochilus pharaonum*, Egypt, SCHMIEDEKNECHT, p. 232, Termes. Fuzetek xxiii, n. sp.
- Rhynchium argentatum*, characters, synonymy, *R. carbonarium* referred to *Pararhynchium*, CAMERON, p. 532, Ann. Nat. Hist. vi.
- R. varicolor*, Sokotra, KIRBY, p. 19, Bull. Liverp. Mus. iii; *R. khasianum*, p. 530, *clypeatum*, p. 531, *lugubrinum*, p. 532, *rugolatum*, p. 533, India, CAMERON, Ann. Nat. Hist. vi : n. spp.
- Vespa vulgaris*, activity in nests in January and February, MOFFAT, Irish Natural. ix, p. 47, BARRINGTON, t. c. p. 108.
- Zethus hemorrhoidalis*, Colombia, KRIECHBAUMER, p. 104, pl. 1, fig. 5, Berlin. ent. Zeitschr. xlv, n. sp.

## HYMENOPTERA FOSSORIA (or SPHEGOIDEA).

- [Cf. ADLERZ (11), ANDRE (27, 28), ASHMEAD (40, 41), BINGHAM (121), BOUVIER (165, 166), CAMERON (220, 221), COCKERELL (279), FERTON (418), FOX (442), FRIESE (459), HANDLIRSCH (556, 557, 558), KINCAID (712, 713), KIRBY (723), KOHL (741, 742), KRIECHBAUMER (783), MANTERO (851), MARCHAL (853), MORICE (926), NIELSEN (943), PECKHAM & PECKHAM (982), SCHMIEDEKNECHT (1156), SHARP (1208).]
- Habits, ADLERZ (11), BOUVIER (165, 166), FERTON (418), MARCHAL (853), NIELSEN (943) and The instinct of *Spheez*, PECKHAM & PECKHAM (982).
- Agenia diana*, Khasia, CAMERON, p. 19, Ann. Nat. Hist. v, n. sp.
- Alyson picteti* ♀, SCHMIEDEKNECHT, p. 233, Termes. Fuzetek xxiii.
- Ammophila rugicollis* and *rubiginosa* are ♂ ♀ of one species, MORICE, p. 67, Ann. Nat. Hist. v; *A. sabulosa*, habits, ADLERZ, pp. 163–170, Ent. Tidskr. xxi.
- A. pæcilocnemis*, p. 67, *albotomentosa*, p. 69, *producticollis*, p. 70, Biskra, MORICE, Ann. Nat. Hist. v: *A. arabica*, Sokotra, KIRBY, p. 24, Bull. Liverp. Mus. iii : n. spp.
- Ampulex pilosa*, p. 37, *pulchriceps*, p. 38, E. India, CAMERON, Ann. Nat. Hist. v, n. spp.
- Apterogyna klugii*, Algeria, ANDRÉ, p. 69, Spec. Hym. viii, n. sp.
- Arachnospila septentrionalis*, Alaska, KINCAID, p. 509, P. Washington Ac. ii, n. sp.
- Astata boops*, habits, ADLERZ, pp. 187–191, Ent. Tidskr. xxi.
- Belomicroides* n. g., p. 312, near *Oxybelus*, for *B. schmiedeknechtii* n. sp., Tunis, p. 314, KOHL, Ann. Hofmus. Wien xiv.
- Belomicrus antennalis*, Sarepta, *femoralis*, Transcaspien, KOHL, p. 2 t. c. n. spp.

- Bembex*, instinct and habit of European, FERTON (418); *B. labiatus*, habits, BOUVIER, p. 874, C.R. Soc. Biol. lii.
- B. dissimilis*, Abd-el-Kuri, KIRBY, p. 22, Bull. Liverp. Mus. iii, n. sp.
- Cenolarras* n. g., p. 28, near *Notogonia*, for *C. appendiculata* n. sp., Barrackpore, p. 29, CAMERON, Ann. Nat. Hist. v.
- Calopompilus* n. g. type *P. maculipennis* Smith, ASHMEAD, p. 188, Canad. Ent. xxxii.
- Campsomeris socotrana*, Sokotra, KIRBY, p. 14, Bull. Liverp. Mus. iii, n. sp.
- Cemonus lethifer*, unicolor, habits, NIELSEN, pp. 270-272, Vid. Medd. 1900.
- Ceratophorus morio*, habits, burrows, NIELSEN, p. 272, cut, t. c.
- Cerceris*, habits of various Swedish species, ADLERZ, pp. 179-187, Ent. Tidskr. xxi; *C. truncatula*, labiata, food-habits, NIELSEN, p. 267, Vid. Medd. 1900.
- C. lobata*, Sokotra, KIRBY, p. 18, Bull. Liverp. Mus. iii; *C. nigra*, St Vincent, ASHMEAD, p. 227, Tr. ent. Soc. London 1900 : n. spp.
- Ceropalus maculata*, note on habits, ADLERZ, p. 195, Ent. Tidskr. xxi.
- C. parva*, Ceylon, CAMERON, p. 20, Ann. Nat. Hist. v, n. sp.
- Clytochrysis chrysostomus*, habits, burrows, NIELSEN, pp. 255-259, cuts, Vid. Medd. 1900.
- Celocrabro leucostomus*, habits, burrows, NIELSEN, p. 259, cut, t. c.
- Celocrabro cloëvorax*, Denmark, NIELSEN, p. 260, t. c. n. sp.
- Crabro 5-signatus*, capturing ants, BIGNELL, p. 264, Ent. Mag. xxxvi.
- C. (Crosocerus) emarginatus*, Mongolia, p. 307, *C. (Rhopalum) austriacus*, Lower Austria, p. 308, *C. (Lindenius) hamilear*, p. 310, *spilostomus*, p. 311, *C. (Entomognathus) euryops*, p. 312, Tunis, KOHL, Ann. Hofmus. Wien xiv; *C. foxii*, p. 356, *angelicus*, p. 358, Washington, KINCAID, Ent. News Philad. xi : n. spp.
- Cratolarras* n. g., near *Tachytes*, for *C. femorata* n. sp., Khasia, CAMERON, p. 34, Ann. Nat. Hist. v.
- Crossocerus palmarius*, habits, NIELSEN, Vid. Medd. 1900, p. 262.
- Diodontus tristis*, minutus, habits, NIELSEN, p. 275, t. c.
- Eidopompilus* n. g. *Pompilidae*, p. 305, for *E. braunsi* n. sp., S. Africa, p. 306, pl. xix, KOHL, Ann. Hofmus. Wien xiv.
- Eidopompilus* ? *premnopterus*, p. 142, pl. viii, fig. 1, *E. krugeri*, p. 143, *rusticorum*, p. 145, *juberti*, p. 146, S. Africa, KOHL, op. cit. xv, n. spp.
- Elis annulata* var. n. *ferrugineipes*, *E. iris* var. n. *loria*, MANTERO, p. 591, Ann. Mus. Genova xl.
- Ephutomma* (= *Sphinctomutilla* André i. l. and on plates ii and vii) *syriaca*, Palestine, p. 140, *biskrensis*, Algeria, p. 143, ANDRÉ, Spec. Hym. viii, n. spp.
- Ferreolomorpha* n. g. type *Priocnemis pedestris* Sm., ASHMEAD, p. 188, Canad. Ent. xxxii.
- Larra* (*Larrada*) *lativalvis*, Turkestan, KOHL, p. 315, Ann. Hofmus. Wien xiv; *L. fuscinerva*, *iridipennis*, p. 26, *longicornis*, p. 27, E. India, CAMERON, Ann. Nat. Hist. v : n. spp.
- Larrada alecto* Sm. referred to *Notogonia*, KIRBY, p. 84, Monogr. Christmas Island.
- Leptolarras* n. g., p. 29, near *Notogonia*, for *L. flavinerva*, p. 30, *longitarsis*, *reticulata*, p. 31, n. spp., E. India, CAMERON, Ann. Nat. Hist. v.
- Lindenius albilabris*, habits, NIELSEN, p. 267, Vid. Medd. 1900.
- Mutilla*, classification, FOX (442); *M.*, commencement of tabulation with *Platymyrmilla*, *Nanomutilla*, new subgenera, p. 130, ANDRÉ, Spec. Hym. viii.
- Mutilla*, the following, males, are described as new species by CAMERON, *empirica*, p. 1, *antera*, p. 3, *perdita*, p. 4, *pandara*, p. 6, *isora*, p. 8, *responsaria*, p. 9, *onara*, p. 11, *honorata*, p. 12, *elmira*, p. 14, *aglaia*, p. 16, *lyrata*, p. 17, *lathonia*, p. 18, *lepcha*, p. 19, *khasiana*, p. 20,

- niobe*, p. 22, *ceruleotincta*, p. 23, *montanata*, p. 24, Khasia Hills; the following are described from females, *amitina*, *consolidata*, Ceylon, p. 26, *redacta*, p. 28, *agelia*, p. 29, *mithila*, p. 30, *dryta*, p. 31, *compactilis*, p. 32, *marialis*, p. 33, *tirhootensis*, p. 34, *violenta*, *pamphia*, p. 35, *marcia*, p. 37, *gnoma*, p. 38, *emancipata*, p. 39, *phaola*, p. 40, India, *edolata*, p. 41, *hesitata*, p. 42, Ceylon, *parthenia*, India, p. 42, *persuasa*, p. 43, *recondita*, p. 44, *aspera*, p. 45, *indocila*, p. 47, Ceylon, *lathargia*, India, p. 48; the following described from males, *foveiscutis*, p. 49, *quadricarinata*, p. 51, India, *cressida*, Ceylon, p. 52, *phaenna*, p. 54, *idylia*, p. 55, *sabellica*, p. 56, *labiena*, p. 58, *morna*, p. 60, *funeraria*, p. 61, *serena*, p. 63, *cleonyma*, p. 64, *maculicornis*, p. 65, *poesia*, p. 67, *ludovica*, p. 68, India, *ogiana*, Ceylon, p. 70, *illa*, India, p. 71, *foveata*, Ceylon, p. 72, *erxia*, India, p. 74, *mikado* ♀, p. 75, *japonica* ♀, p. 76, Japan, CAMERON, Mem. Manchester Soc. xlv, No. 15; *M. (Ephuta) azurea*, Papua, MANTERO, p. 584, Ann. Mus. Genova xl : n. spp.
- Mimesa propinqua*, Alaska, KINCAID, p. 508, P. Washington Ac. ii, n. sp.
- Miscus campestris*, habits, ADLERZ, pp. 170-172, Ent. Tidskr. xxi.
- Motes splendens*, St Vincent, ASHMEAD, p. 226, Tr. ent. Soc. London 1900, n. sp.
- Myzine ceylonica*, Trincomali, CAMERON, p. 18, Ann. Nat. Hist. v, n. sp.
- Nanomutilla* subg. n. of *Mutilla*, q. v.
- Notogonia bicolor*, Sokotra, KIRBY, p. 16, Bull. Liverp. Mus. iii; *N. chapmani*, Himalaya, CAMERON, p. 25, Ann. Nat. Hist. v : n. spp.
- Nysson braunsii*, S. Africa, HANDLIRSCH, p. 510, Verh. Ges. Wien l, n. sp.
- Odontolarra* n. g., near *Parapiagetia*, p. 35, for *O. rufiventris* n. sp., Khasia, p. 36, CAMERON, Ann. Nat. Hist. v.
- Oxybelus uniglumis* and *Miltogramma*, ADLERZ, p. 193, Ent. Tidskr. xxi.
- O. ceylonicus*, Ceylon, CAMERON, p. 40, Ann. Nat. Hist. v, n. sp.
- Parapsammophila monilicornis*, Biskra, MORICE, p. 66, t. c. n. sp.
- Passaloecus monilicornis*, *turionum*, habits, p. 269, cut p. 270, NIELSEN, Vid. Medd. 1900.
- Pemphredon*, cocoons, NIELSEN, pp. 273-275, cut, t. c.
- Pepsis bruneicornis*, hermaphrodite, FRIESE (459); *P. formosa* var. n. *theresia*, KRIECHBAUMER, p. 102, pl. i, fig. 4, Berlin. ent. Zeitschr. xlv.
- Philanthus triangulum*, habits, BOUVIER, p. 1129, C.R. Soc. Biol. lii.
- Planiceps tarsalis*, Grenada and St Vincent, ASHMEAD, p. 231, Tr. ent. Soc. London 1900, n. sp.
- Platymyrmilla* s. g. of *Mutilla*, q. v.
- Pompilidae*, classification of the family, ASHMEAD, pp. 149-155, 185-188, 295, 296, Canad. Ent. xxxii.
- Pompilus viaticus*, *unguicularis*, habits, ADLERZ, pp. 193-195, Ent. Tidskr. xxi; *P. sericeus*, habits, MARCHAL, p. 1113, C.R. Soc. Biol. lii; *P. spissus*, *plumbeus*, *fumipennis*, habits, NIELSEN, pp. 276, 277, Vid. Medd. 1900; *P. approximatus*, characters, SAUNDERS, p. 51, Ent. Mag. xxxvi.
- P. perturbans*, p. 539, *implacabilis*, p. 540, India, CAMERON, Ann. Nat. Hist. vi; *P. ceylonensis*, p. 77, *taprobana*, p. 78, Ceylon, CAMERON, Mem. Manchester Soc. xlv, No. 15 : n. spp.
- Prionocnemis erythroptera*, Colombia, KRIECHBAUMER, p. 102, pl. i, fig. 2, Berlin. ent. Zeitschr. xlv, n. sp.
- Psammophila*, habits, ADLERZ, pp. 172-178, Ent. Tidskr. xxi.
- P. masinissa*, p. 65, *micipsa*, *gulusa*, p. 168, Biskra, MORICE, Ann. Nat. Hist. v, n. spp.
- Psen atratus*, habits, NIELSEN, p. 269, Vid. Medd. 1900.
- Pseudogentia carbonaria*, habits, NIELSEN, p. 277, t. c.
- Pseudapis* n. g. *Sphegida*, anomalous, p. 15, for *P. anomala* n. p. 16, KIRBY, Bull. Liverp. Mus. iii.



- Pseudomethocha uncinata*, St Vincent, ASHMEAD, p. 239, Tr. ent. Soc. London 1900, n. sp.
- Rhopalum clavipes*, habits, burrows, NIELSEN, pp. 262-265, cuts, *tibiale*, habits, p. 265, NIELSEN, Vid. Medd. 1900.
- R. quadricolor*, Sokotra, KIRBY, p. 17, Bull. Liverp. Mus. iii, n. sp.
- Ronisia* Costa, *Trogaspidia* Ashm., *Alloneurion* Ashm., discussed and rejected, ANDRÉ, pp. 128, 129, Spec. Hym. viii.
- Salix sanguinolentus*, note on habits, ADLERZ, p. 194, Ent. Tidskr. xxi; *Salix* attacking *Galeodes*, BINGHAM (121).
- Sceliphron lineatipes*, Khasia, CAMERON, p. 36, Ann. Nat. Hist. v, n. sp.
- Scotomphales* n. n. for *Omphalius* Vachal 1899, nec Philippi, VACHAL, p. 233, Bull. Soc. ent. France 1900.
- Solenius vagus*, burrows, NIELSEN, p. 259, Vid. Medd. 1900.
- Spanolarra* n. g., p. 32, near *Larra*, for *S. rufitarsis* n. sp., Barrackpore, p. 33, CAMERON, Ann. Nat. Hist. v.
- Spherophthalma foxi* var. n. *arizonica*, COCKERELL, p. 65, Entomologist xxxiii.
- S. heliophila*, Arizona, COCKERELL, l. c. n. sp.
- Spheg umbrosus* var., swarm, habits, BINGHAM (121).
- Spheg erebus*, Sokotra, p. 15, *granti*, Abd-el-Kuri, p. 23, KIRBY, Bull. Liverp. Mus. iii, n. spp.
- Sphinctomutilla* cf. *Ephutomma*.
- Stigmus smithii*, *thoracicus*, St Vincent, ASHMEAD, p. 223, Tr. ent. Soc. London 1900, n. spp.
- Stizus schmiedeknechtii*, Damascus, HANDLIRSCH, p. 449, Verh. Ges. Wien 1; *S. scutellaris*, p. 16, *adelphus*, p. 17, Sokotra, KIRBY, Bull. Liverp. Mus. iii; *S. boër*, p. 471, *hemorrhoidalis*, *oxydorus*, p. 472, *funebis*, p. 473, *S. Africa*, HANDLIRSCH, Ver. Ges. Wien 1 : n. spp.
- Tachytes pectinipes*, habits, NIELSEN, p. 268, Vid. Medd. 1900.
- T. trivittatus*, Sokotra, KIRBY, p. 16, Bull. Liverp. Mus. iii; *T. interstitialis*, p. 20, *ceylonica*, p. 21, *brevipennis*, Barrackpore, p. 22, *aureifrons*, *taprobana*, p. 23, *maculitarsis*, p. 24, Barrackpore, CAMERON, Ann. Nat. Hist. v : n. spp.
- Tetraodontonyx* n. g. *Pepsine* for *T. rufipes* n. sp. (not described), Africa, ASHMEAD, p. 187, Canad. Ent. xxxii.
- Thynnus serriger*, New Britain, SHARP, p. 388, pl. xxiv, fig. 13, Willey Results iv; *T. (Elaphroptera) racovitzai*, *holomelas*, Patagonia, ANDRÉ, p. 105, Ann. Soc. ent. Belgique xlv : n. spp.
- Tiphia crassinervis*, Sokotra, KIRBY, p. 15, Bull. Liverp. Mus. iii; *T. brevipennis*, Barrackpore, CAMERON, p. 17, Ann. Nat. Hist. v : n. spp.
- Trypoxylon figulus*, habits, NIELSEN, p. 268, Vid. Medd. 1900.
- T. pygmaeum*, India, CAMERON, p. 79, Mem. Manchester Soc. xlv, n. sp.

## FORMICIDÆ (or HETEROGYNA).

- [Cf. ASHMEAD (40), BETHE (114), DOMINIQUE (344), EMERY (369-376), ESCHERICH (384), FIELDE (419), FOREL (434-439, 511), GOUNELLE (515), GREEN (520), KANNENBERG (671), KIRBY (724), LAGERHEIM (790), MACKENZIE (846), MAYR (875), PERGANDE (988), REICHENBACH (1089), RUDOW (1142), SMITH (1247), SYKES (1300), ULE (1347), VIEHMEYER (1355), WASMANN (1377), WHEELER (1407-1409, 1412), YUNG (1421).]

Comparative anatomy of thorax, especially of workers; ergatogynous forms; epinotum new term for propodeum; postpetiole; EMERY, p. 131, Ofv. Finska Forh. xl.

*Epinotum*, unnecessary term, MAYR, p. 274, Ent. Tidskr. xxi.

- FOREL continues his monograph of Indian *Formicidæ* (435) dealing with *Ponerinæ* and *Dorylinæ*.  
 Brief note on larvæ, EMERY (372, 373).  
 Habits, larvæ, of *Ponerinæ*, *Odontomachinæ*, *Amblyopinæ*, WHEELER (1407, 1408).  
 Nesting-habits and swarming of *Huberia striata* and *Monomorium striatum* in New Zealand, W. W. SMITH (1247).  
 The psychology of Ants, BETHE (114).  
 Census of nests of *Formica rufa*, YUNG (1421).  
 Ants imported (at Hamburg), FOREL, pp. 284-287, Mt. Schweiz. ent. Ges. x.  
 The constructions of Ants, RUDOW (1142).  
 Ant-dwellings in East Africa, KANNENBERG (671).  
 Experiments as to finding nest, VIEHMEYER (1355).  
 Mushroom gardens of *Atta fervens*, WHEELER (1412).  
 Ants and plants in Brazil, ULE (1347).  
 Production of sound by *Camponotus mus*, GOUNELLE (515).  
 Association of *Formica pratensis*, *F. fusca* and *Polyergus rufescens*, FOREL, pp. 280-282, Mt. Schweiz. ent. Ges. x.  
 Artificial nests, or cages, for observation of ants, FIELDE (419), WHEELER (1408).  
*Acropyga crassicornis*, New Guinea, EMERY, p. 698, Ann. Mus. Genova xl;  
*A. (Rhizomyrma) oceanica*, New Guinea, EMERY, p. 323, Termes. Fuzetek xxiii : n. spp.  
*Enictus wroughtonii* var. n. *sagei*, p. 469, *ceylonicus* var. n. *latro*, p. 477, FOREL, J. Bombay Soc. xiii.  
*Æ. gleadowii*, p. 469, *longi*, p. 470, *shuckardi*, *clavatus*, *latiscapus*, p. 471, *clavitibia*, *arya*, p. 472, *martini*, *fergusoni*, p. 473, with varr. *piltsi*, *hodgsoni*, *montanus*, p. 474, *Æ. aikenii*, p. 475, *punensis*, p. 476, India, FOREL, J. Bombay Soc. xiii; *Æ. aratus*, p. 74, *turneri*, Australia, *cornutus*, Sarawak, p. 75, *binghami*, Burma, p. 76, FOREL, Ann. Soc. ent. Belgique xlv; *Æ. curraz*, New Guinea, EMERY, p. 310, Termes. Fuzetek xxiii : n. spp.  
*Amblyopone (Stigmatomma) bellii*, p. 55, *rothneyi*, p. 56, India, FOREL, J. Bombay Soc. xiii, n. spp.  
*Anelous* subg. n., cf. *Pheidologeton*.  
*Anochetus sedilloti* var. n. *indicus*, p. 61, *A. orientalis kanarensis* n. st., p. 62, *A. punctiventris taylora* n. st., p. 63, FOREL, t. c.  
*A. risii*, p. 60, India, *yerburyi*, Ceylon, p. 62, FOREL, t. c.; *A. turneri*, Queensland, FOREL, p. 55, Ann. Soc. ent. Belgique xlv : n. spp.  
*Anomma arcens*, habits, CLEMENTS, p. 89, Tr. Manchester Micr. Soc. 1899.  
*Aphenogaster testaceopilosa* var. n. *balcanica*, p. 136, *A. subterraneum* subsp. n. *holtzi*, p. 139, EMERY, Ofv. Finska Forh. xl.  
*A. ovaticeps*, S. Europe, EMERY, p. 136, t. c. n. sp.  
*Atopomyrmex selebensis*, Celebes, EMERY, p. 234, Rend. Acc. Bologna ii, n. sp.  
*Atta sexdens*, habits, DOMINIQUE (344); founding new colony, EMERY, p. 129, Ofv. Finska Forh. xl.  
*Belonopelta darwini* var. n. *indica*, FOREL, p. 320, J. Bombay Soc. xiii;  
*B. darwini*, referred to *Pachycondyla*, EMERY, p. 668, Ann. Mus. Genova xl.  
*Calomyrmex purpureus* var. n. *amaragdina*, EMERY, p. 238, Rend. Acc. Bologna ii.  
*Camponotus*, *Polyrhachis* and allies, supplement to catalogue, EMERY (370).  
*C. marginatus* varr. n. *lameerei*, *ruzszyi*, p. 150, *C. gestroi* subsp. n. *kurdistanicus*, p. 151, EMERY, Ofv. Finska Forh. xl; *C. festinus eximius* subsp. n., p. 701, *gilviceps* Mayr., synonymy, p. 702, *C. maculatus* var. n. *puberula*, p. 703, subsp. n. *curtus*, p. 704, *pilosus*

- Sm.=(*pubescens* Mayr), p. 706, *doriae*, characters, *vitreus* var. n. *prærufo*, p. 707, EMERY, Ann. Mus. Genova xl; *C. senex*, nest, FOREL, p. 271, Mt. Schweiz. ent. Ges. x.
- C. rufifemur*, p. 705, *horripilus*, p. 708, *exsectus*, p. 709, Sumatra, EMERY, Ann. Mus. Genova xl : n. spp.
- Cardiocondyla wrightoni* ♀ and ♂, EMERY, p. 680, t. c.
- Centromyrmex feæ* var. n. *ceylonicus*, FOREL, p. 303, J. Bombay Soc. xiii.
- Cerapachys*, affinities, p. 330, FOREL, t. c.
- C. aikenii*, India, FOREL, p. 332, t. c.; *C. singularis*, S. Australia, FOREL, p. 69, Ann. Soc. ent. Belgique xlv : n. spp.
- Cremastogaster sordidula* var. n. *osakensis*, FOREL, p. 269, Mt. Schweiz. ent. Ges. x; *C. deformis* var. n. *mucronata*, EMERY, p. 690, Ann. Mus. Genova xl; *C. scutellaris*, habits, larva, SEURAT, pp. 1-3, Ann. Sci. Nat. xi.
- C. modiglianii*, p. 688, *tumidula*, p. 689, Sumatra, EMERY, Ann. Mus. Genova xl; *C. enneamera*, p. 330, *polita*, *leguilloni*, p. 331, *biroi*, *flavitaris*, p. 332, New Guinea, EMERY, Termes. Fuzetek xxiii : n. spp.
- Cryptopone fusciceps*, *tenuis*, New Guinea, EMERY, p. 321, t. c. n. spp.
- Cyphomyrmex wheeleri*, Texas, FOREL, p. 282, Mt. Schweiz. ent. Ges. x, n. sp.
- Diacamma scalpratum* var. n. *violaceum*, *D. rugosum* var. n. *rothneyi*, p. 319, FOREL, J. Bombay Soc. xiii.
- Dolichoderus carbonarius* *latisquamis* subsp. n., *D. patens pubiventris* subsp. n., EMERY, p. 694, Ann. Mus. Genova xl.
- D. modiglianii*, Sumatra, with var. *rubescens* Mentawai, EMERY, p. 693, t. c. n. sp.
- Dorylini*; insect-guests of in Brazil and Africa, WASMANN (1377).
- Dorylus orientalis*, food-habits, GREEN, p. 39, Indian Mus. Notes v.
- Echinopla striata* var. n. *vermiculata*, EMERY, p. 244, Rend. Acc. Bologna ii.
- Eciton sumichrasti*, ♀, natural history, WHEELER, Amer. Natural. xxxiv, pp. 563-574, cuts.
- Ectatomma bicolor* var. n. *minor*, FOREL, p. 317, J. Bombay Soc. xiii; *E. cristatum* var. n. *punctiventris*, p. 56, *convexum* var. n. *spatiatum rufescens*, p. 58, *metallicum* var. n. *cristulatum obscurum*, pp. 59, 60, FOREL, Ann. Soc. ent. Belgique xlv; *E. coxale* Rog., queried, EMERY, p. 662, Ann. Mus. Genova xl.
- E. binghamii*, Burma, FOREL, p. 317, J. Bombay Soc. xiii; *E. (Rhytidoponera) tenue*, p. 58, *rothneyi*, p. 56, *mania*, p. 57, Australia, FOREL, Ann. Soc. ent. Belgique xlv : n. spp.
- Ectomyrmex javanus* n. st. *maternus*, *annamitus* var. n. *arcuatus*, FOREL, p. 322, J. Bombay Soc. xiii.
- Formica fusca* var. n. *nipponensis*, FOREL, p. 270, Mt. Schweiz. ent. Ges. x; *F. sanguinea* and *fusca*, all forms of together, MORICE, p. xix, P. ent. Soc. London 1900.
- Iridomyrmex itoi*, Japan, FOREL, p. 269, Mt. Schweiz. ent. Ges. x; *I. bicknelli*, figg. 6, 7, *mattiroloi*, fig. 8, Tasmania, EMERY, p. 236, Rend. Acc. Bologna ii : n. spp.
- Ischnomyrmex longipes* var. n. *conicollis*, *feæ* var. n. *imbellis*, EMERY, p. 681, Ann. Mus. Genova xl; *I. famelicus* referred to *Aphanogaster*, FOREL, p. 267, Mt. Schweiz. ent. Ges. x.
- I. dromedarius* with var. *fusca*, EMERY, p. 322, Termes. Fuzetek xxiii, n. sp.
- Lasius niger sitkaensis* subsp. n., PERGANDE, p. 519, P. Washington Ac. ii; *L. fuliginosus*; the fungus found in its nests, LAGERHEIM (790).
- Leptogenys fallax* n. st. *fortior*, p. 64, *L. conigera* n. stt., *mutans*, *adlerzi*, p. 65, FOREL, Ann. Soc. ent. Belgique xlv; *L. kitteli* var. n. *foveolata*,

- EMERY, p. 670, Ann. Mus. Genova xl; *L. kitteli* var. n. *minor*, st. n. *altisquamis*, *L. diminuta* var. n. *sarasinorum*, st. n. *palliseri*, p. 312, *L. pequeti* st. n. *watsoni*, p. 314, FOREL, J. Bombay Soc. xiii; *L. diminuta* var. n. *fruhstorferi*, EMERY, p. 233, Rend. Acc. Bologna ii.
- L. pruinosa, dentilobis*, p. 309, *birmana, binghamii*, p. 310, *hysterica, roberti, dalyi, yerburyi*, p. 311, *assamensis, minchinii*, p. 313, India, FOREL, J. Bombay Soc. xiii; *L. modiglianii*, p. 669, *L. (Lobopelta) parvula*, p. 670, Sumatra, EMERY, Ann. Mus. Genova xl; *L. (Lobopelta) magna*, p. 65, *bidentata*, p. 66, *L. turneri*, p. 67, Australia, FOREL, Ann. Soc. ent. Belgique xlv, n. spp.
- Leptomyrmez niger*, New Guinea, EMERY, p. 333, Termes. Fuzetek xxiii, n. sp.
- Leptothorax tuborum* var. n. *korbi*, p. 133, var. n. *leviceps*, p. 134, EMERY, Ofv. Finska Forh. xl; *L. yankee* var. n. *kincaidi*, PERGANDE, p. 520, P. Washington Ac. ii.
- Lioponera longiarms* n. st. *parva*, FOREL, p. 330, J. Bombay Soc. xiii.
- Lobopelta diminuta* Sm. (as *Ponera*), ♀, fig. 6, ♀, fig. 7, pl. xiv, KIRBY, p. 83, Monogr. Christmas Island.
- Macromischa sallei*, nest, FOREL, p. 272, Mt. Schweiz. ent. Ges. x.
- Messor barbarum* var. n. *lurida*, p. 139, *M. structor* var. n. *tyrrhena*, p. 141, *orientalis*, p. 143, EMERY, Ofv. Finska Forh. xl.
- Monomorium foenulatum* var. n. *papuarica*, EMERY, p. 326, Termes. Fuzetek xxiii.
- M. sahlbergi*, Jericho, EMERY, p. 131, Ofv. Finska Forh. xl, n. sp.
- Myrmecia picta* var. n. *infima*, FOREL, p. 54, Ann. Soc. ent. Belgique xlv.
- M. aberrans*, S. Australia, FOREL, p. 54, t. c.; *M. tepperi*, p. 231, pl. fig. 1, *gracilis*, p. 232, fig. 2, Australia, EMERY, Rend. Acc. Bologna ii : n. spp.
- Myrmecina undulata*, Sumatra, EMERY, p. 678, Ann. Mus. Genova xl, n. sp.
- Myrmecocystus viaticus* var. n. *seticornis*, Gold Coast, *turcomanica*, EMERY, p. 147, Ofv. Finska Forh. xl.
- Myrmecorhynchus emeryi*, discussed, EMERY, p. 237, pl. figg. 9, 10, Rend. Acc. Bologna ii.
- Myrmica sabuleti* var. n. *lobifrons*, PERGANDE, p. 521, P. Washington Ac. ii.
- Myrmicaria fodiens*; *Physatta dromedarius* Sm. is probably ♀; *M. arachnoides* var. n. *luteiventris*, EMERY, p. 692, Ann. Mus. Genova xl.
- M. melanogaster*, Borneo, EMERY, p. 692, t. c. n. sp.
- Odontomachus monticola* var. n. *longi*, FOREL, p. 58, J. Bombay Soc. xiii; *O. latidens sumatranus* subsp. n., EMERY, p. 671, cuts p. 672, Ann. Mus. Genova xl; *O. ruficeps acutidens* n. st., *turneri* n. st., FOREL, p. 56, Ann. Soc. ent. Belgique xlv.
- Oecophylla smaragdina* as an article of food, LONG, p. 536, J. Bombay Soc. xiii; *O. smaragdina*, special nests for *Coccid*, WROUGHTON, p. 251, Ent. Mag. xxxvi; *O. smaragdina* using larva for spinning, GREEN (520).
- Oligomyrmex atomus*, p. 328, *subreptor*, p. 329, New Guinea, EMERY, Termes. Fuzetek xxiii, n. spp.
- Pachycondyla (Ectomomyrmex) modiglianii*, Sumatra, *obtusula*, Borneo, EMERY, p. 667, Ann. Mus. Genova xl; *P. acuta*, New Guinea, EMERY, p. 314, Termes. Fuzetek xxiii : n. spp.
- Paltothyreus pestilentia*, habits, CLEMENTS, p. 90, Tr. Manchester Micr. Soc. 1899.
- Pheidole serripinosa* var. n. *fuscescens*, subsp. n. *biroi*, *P. umbonata fusciventris* subsp. n., p. 323, EMERY, Termes. Fuzetek xxiii; *P. capallinii*, *asperata* is probably distinct, EMERY, p. 681, *P. quadronis worker* and soldier, p. 682, Ann. Mus. Genova xl.



- P. minima*, p. 275, *buchholzi*, p. 276, Cameroons, MAYR, Ent. Tidskr. xxi;  
*P. quadrensensis*, Sumatra, FOREL, p. 25, Ann. Soc. ent. Belgique xlv;  
*P. quadricuspis*, p. 683, *modiglianii*, p. 684, *ghigii*, p. 685, *elias*,  
 p. 686, *rinæ*, p. 687, Sumatra, EMERY, Ann. Mus. Genova xl; *P. cericocornis*,  
 p. 322, *lobulata*, *cryptocera*, p. 324, *laminata*, *fuscata*,  
 p. 325, New Guinea, EMERY, Termes. Fuzetek xxiii; *P. reyni*, Ham-  
 burg, imported from S. America, FOREL, p. 285, Mt. Schweiz. ent.  
 Ges. x : n. spp.
- Pheidologeton affinis* var. n. *minor*, p. 326, *P. similis* var. n. *crassiuscula*,  
 p. 328, EMERY, Termes. Fuzetek xxiii.
- P. (Aneleus* subg. n.) *minimus*, New Guinea, EMERY, p. 327, t. c. n. sp.
- Plagiotelepis steingroveri* nov. st. *gertrudæ*, FOREL, p. 77, Ann. Soc. ent.  
 Belgique xlv.
- Platythyrea sagei*, *wroughtonii* with st. *victoria*, p. 316, India, FOREL,  
 J. Bombay Soc. xiii; *P. tricuspidata*, Sumatra, p. 665, *subtilis*, Borneo,  
*palawanicum*, Palawan, p. 666, EMERY, Ann. Mus. Genova xl : n. spp.
- Podomyrma micons sericeiventris* subsp. n., EMERY, p. 235, Rend. Acc.  
 Bologna ii.
- Polyrhachis andromache* var. n. *semitestacea*, p. 334, *P. heinlethi* var. n.  
*papua*, p. 336, EMERY, Termes. Fuzetek xxiii; *P. gracilis* var. n.  
*cnemidata*, p. 710, *zopyrus* var. n. *edentula*, *oryllus subcarinata*  
 subsp. n., p. 712, *nigropilosa* var. n. *conophthalma*, p. 713, *acantha*  
 and allied forms synonymy, pp. 716–718, *rastellata* = (*busiris* Sm.)  
 subsp. n. *fornicata*, p. 720, EMERY, Ann. Mus. Genova xl; *P. zopyrus*,  
*imbellis*, *rufofemorata*, *merops*, notes on, p. 241, *P. vestita* var. n.  
*unicolor*, p. 242, EMERY, Rend. Acc. Bologna ii; *P. militaris*, habits,  
 SYKES, p. 91, Tr. Manchester Micr. Soc. 1899.
- P. simillima*, *subtridens*, *elii*, p. 711, *gestroi*, p. 714, *basirufa*, p. 715,  
*atrovirens*, p. 718, *retroarsa*, p. 719, Sumatra, EMERY, Ann. Mus.  
 Genova xl; *P. fruhstorferi*, Celebes, p. 238, pl., figg. 11, 12, *lom-  
 bokensis*, Lombok, p. 239, *unicuspis*, fig. 13, p. 240, *strictifrons*, fig. 14,  
 p. 241, Celebes, *atalanta*, New Guinea, figg. 15, 16, p. 243, EMERY,  
 Rend. Acc. Bologna ii; *P. chartifex*, p. 334, *caliope*, *lacinata*, *ar-  
 genteosignata*, p. 335, *croceiventris*, p. 336, New Guinea, EMERY,  
 Termes. Fuzetek xxiii : n. spp.
- Ponera trigona* st. n. *converiuscula*, p. 60, *P. coarctata* var. n. *mockayensis*,  
 p. 61, *P. truncata* var. n. *elliptica*, *P. melanaria* st. n. *australis*, *P. sub-  
 levis* st. n. *reticulata*, p. 62, *P. piliventris* var. n. *intermedia*, p. 63,  
*P. excavata* var. n. *acuticostata*, p. 64, FOREL, Ann. Soc. ent. Belgique  
 xlv; *P. sulcata* var. n. *sulcatotesserinoda*, *fossulata*, p. 326, *P. con-  
 finis* var. n. *aikenii*, *wroughtonii*, p. 327, FOREL, J. Bombay Soc. xiii;  
*P. coarctata* var. n. *lucida*, EMERY, p. 130, Ofv. Finska Forh. xl.
- P. jerdonii*, India, FOREL, p. 327, J. Bombay Soc. xiii; *P. selenophora*,  
*clavicornis*, p. 317, *biroi*, p. 318, *papua*, *pruinosa*, p. 319, *mocsaryi*,  
*pallidula*, p. 320, New Guinea, EMERY, Termes. Fuzetek xxiii; *P. que-  
 enslandensis*, p. 61, *P. (Bothroponera) dubitata*, p. 63, Australia,  
 FOREL, Ann. Soc. ent. Belgique xlv : n. spp.
- Prenelepis opaca metallescens* subsp. n., p. 698, *jerdoni subopaca* subsp. n.,  
 p. 699, EMERY, Ann. Mus. Genova xl.
- P. procera*, Sumatra, EMERY, p. 699, t. c. n. sp.
- Pristomyrmex trachylissa* var. n. *bicolor*, EMERY, p. 678, t. c.
- P. japonicus*, Japan, FOREL, p. 268, Mt. Schweiz. ent. Ges. x, n. sp.
- Rhopalomastix* n. g. near *Solenopsis*, for *R. rothneyi* n. sp., India, FOREL,  
 p. 24, Ann. Soc. ent. Belgique xlv.
- Rhopalopone epinotalis* worker, EMERY, p. 311, Termes. Fuzetek xxiii.
- R. cribrata*, New Guinea, EMERY, p. 311, t. c. n. sp.
- Rhytidoponera metallica* var. n. *tasmaniensis*, EMERY, p. 232, Rend. Acc.  
 Bologna ii.

- R. anceps*, Queensland, id. p. 233, pl., fig. 3, t. c.; *R. aenescens, inope*, New Guinea, EMERY, p. 312, Termes. Fuzetek xxiii, n. spp.
- Sima*, characters of Indo-Australian, pp. 673, 674, *S. attenuata* var. n. *tenuissima*, p. 675, *allaborans* var. n. *sumatrensis*, p. 76, and subsp. n. *crassiuscula*, p. 677, EMERY, Ann. Mus. Genova xl.
- S. humerosa*, New Guinea, p. 674, *brevicornis*, Luzon, p. 675, *difficilis*, Sumatra, p. 677, EMERY, t. c. n. spp.
- Solenopsis papuana*, New Guinea, EMERY, p. 330, Termes. Fuzetek xxiii, n. sp.
- Sphinctomyrmex taylori*, Orissa, FOREL, p. 328, J. Bombay Soc. xiii; *S. turneri*, p. 70, *froggatti*, p. 71, *S. (Eusphinctus) steinheili*, p. 72, *fallax*, p. 73, Australia, FOREL, Ann. Soc. ent. Belgique xlv : n. spp.
- Stenamma westwoodi* var. n. *hirtula*, EMERY, p. 135, Ofv. Finska Forh. xl.
- Stictoponera costata*, variation and synonymy, EMERY, p. 662, Ann. Mus. Genova xl.
- S. borneensis*, Sarawak, EMERY, l. c. n. sp.
- Strongylognathus*; table of species, pp. 278-280; *S. huberi*, ♂ ♀, relations with *Tetramorium*, pp. 273-278, FOREL, Mt. Schweiz. ent. Ges. x.
- Syacia australis*, p. 68, with var. *edentata*, p. 69, Queensland, FOREL, Ann. Soc. ent. Belgique xlv, n. sp.
- Tapinoma flavipes* Sm. referred to *Prenolepis*, ♂ characters, FOREL, p. 270, Mt. Schweiz. ent. Ges. x.
- T. sundaicum, setiferum*, Sumatra, p. 695, *modigliani*, p. 696, Sumatra, EMERY, Ann. Mus. Genova xl, n. spp.
- Tetramorium schneideri*, Bukhara, EMERY, p. 146, Ofv. Finska Forh. xl; *T. coloreum*, Cameroons, MAYR, p. 273, Ent. Tidskr. xxi : n. spp.
- Trapeziopelta maligna* var. n. *punctigera*, *T. modiglianii*, *bidens*, descriptions, cuts, EMERY, pp. 663-665, Ann. Mus. Genova xl.
- T. xiphias, tenuis*, New Guinea, EMERY, p. 313, Termes. Fuzetek xxiii, n. spp.
- Vollenhovenia modiglianii*, Sumatra, EMERY, p. 679, Ann. Mus. Genova xl, n. sp.

## CHRYSIDIDÆ.

[Cf. ASHMEAD (41), BUYSSON (217), KRIECHBAUMER (783), MORICE (925), SEURAT (1206).]

Table of the British species, MORICE (925).

Respiratory system of larva, SEURAT (1206).

*Chrysis xanthocera* var. *viridis* var. nov., p. 149, *lyncea* var. n. *nigra*, p. 153, *orientalis* var. n. *africanus*, p. 155, *plusia* var. n. *cærulescens*, DU BUYSSON, Rev. Ent. franc. xix.

*C. laodamia, theresæ*, Syria, p. 135, *rhodocheila, lucasi*, Algeria, p. 137, *rubricollis, barbata*, p. 138, *appendiculata*, Syria, p. 139, *vachali*, Tunis, *moriceana*, Algeria, p. 140, *puella*, Egypt, p. 141, *martinella*, Persia, p. 142, *insueta*, Zululand, p. 143, *cameroni*, Bahia, p. 144, *friesei*, Algeria, *diabolica*, Natal, p. 145, *inania*, Cape Colony, p. 146, *apiata*, p. 149, *iranensis, sefrensis*, p. 150, Persia, *naïla*, Biskra, p. 151, *myata, misella*, Jericho, p. 152, *aurifera*, Zululand, p. 153, DU BUYSSON, t. c. n. spp.

*Chrysogona bicullosa*, Madagascar, DU BUYSSON, p. 131, t. c. n. sp.

*Ellampus pici*, Smyrna, *syriacus*, Beyrout, DU BUYSSON, p. 126, t. c. n. spp.

*Hedychridium modestum, planifrons*, Egypt, DU BUYSSON, p. 129, t. c. n. spp.

*Hedychrum buyssoni*, Congo, p. 129, *morosum*, Egypt, p. 130, *davidi*, China, p. 131, DU BUYSSON, t. c. n. spp.

- Holophris congoensis*, Africa, DU BUYSSON, p. 127, t. c. n. sp.  
*Parnopes schmiedeknechti*, extended description, DU BUYSSON, p. 157, t. c.  
*P. vareillesi*, Algeria, DU BUYSSON, l. c. n. sp.  
*Pleurocera*; characters, ♂ ♀, DU BUYSSON, p. 133, t. c.  
*Spinolia rugosa*, Egypt, DU BUYSSON, p. 132, t. c. n. sp.  
*Stilbum splendidum* v. *amethystinum* in England, MASON, p. 243, Ent. Mag. xxxvi.

## HYMENOPTERA PARASITICA.

- [Cf. ALFKEN (20), ASHMEAD (37-40, 42, 43), BASSETT (76), BERTHOUMIEU (112, 113), CAMERON (220, 222), COCKERELL (278), FROGGATT (466), GIARD (502), HARRINGTON (563), HOWARD (614), JAQUET (660), KIEFFER (700-703), KIRBY (723, 724), KOKUJEW (744-746), KRIECHBAUMER (783, 784), MANTERO (850), MARCHAL (852, 854), MARSHALL (861, 862), MEUNIER (902, 903), POSPJELOW (1050), SCHMIEDEKNECHT (1155, 1156), SEURAT (1202, 1207), SURVEYOR (1296), STEFANI (1275), SZÉPLIGETI (1301-1304), TOSQUINET (1325A, 1326), VATSIÈRE & BORDAS (1353), ZEHNTER (1425, 1429, 1430).]

The families of *Ichneumonidea*, ASHMEAD, pp. 5, 6, P. U. S. Mus. xxiii.  
 List of species of *Lepidoptera* from which parasites have been reared, with names of the parasites, BIGNELL in BUCKLER (191), pp. 384-387.  
 Parasites of the Hessian fly in Russia, POSPJELOW (1050).  
 Respiratory system of larva of *Tryphon*, SEURAT (1207).

## ICHNEUMONIDÆ.

- Ichneumonidæ*: the subfamilies and genera tabulated, ASHMEAD, pp. 10-103, P. U. S. Mus. xxiii.  
 Criticism of Thomson's views as to nervures in *Cryptides*, KRIECHBAUMER, Ent. Nachr. xxvi, pp. 359, 360.  
 Monograph of palearctic *Lissonotina*, SCHMIEDEKNECHT, Zool. Jahrb. Syst. xiii.  
*Acoenites clavicornis*, Tunis, SCHMIEDEKNECHT, p. 235, Termes. Fuzetek xxiii, n. sp.  
*Agathobanchus* n. g., type *Banchus equatus* Say, ASHMEAD, p. 97, P. U. S. Mus. xxiii.  
*Agriotypidæ*: characters, ASHMEAD, p. 9, t. c.  
*Agyron flavopictus*, Grenada, ASHMEAD, p. 271, Tr. ent. Soc. London 1900, n. sp.  
*Aithris* n. g. *Tryphonides*, p. 106, for *A. cornutus* n. sp., India, p. 107, CAMERON, Mem. Manchester Soc. xlv, No. 15.  
*Allotheronia* n. g. *Pimplini*, type *A. 12-guttata* Ashm. (not described), ASHMEAD, p. 55, P. U. S. Mus. xxiii and *Allotheronia* n. g. near *Theronia*, for *A. 12-guttata* n. sp., Australia, ASHMEAD, P. Linn. Soc. N. S. Wales xxv, p. 351.  
*Alomya moerens* Perty, to *Joppidium*, (= *Cryptus violaceipennis* Br.), KRIECHBAUMER, p. 293, Ent. Nachr. xxvi.  
*Amblyteles gaullei*, Tunis, *solymus*, Jerusalem, BERTHOUMIEU, p. 249, Bull. Soc. ent. France 1900, n. spp.  
*Anarthronota* n. g., p. 330, for *Lissonota manca* Br. and *A. thuringiaca* n. sp., Thuringia, SCHMIEDEKNECHT, Zool. Jahrb. Syst. xiii.  
*Anodontomerus* n. g. type *Aplomerus tibialis* Prov., ASHMEAD, p. 61, P. U. S. Mus. xxiii.  
*Anomalon tenuicorne*, host, BUYSSON, p. 342, Bull. Soc. ent. France 1900.  
*A. amabile*, Sarepta, TOSQUINET, p. 171, Ann. Soc. ent. Belgique xlv; *A.*

- (*Laphyctes*) *formosum*, p. 239, *elegantulum*, p. 240, *A. (Labrorhychus) lavicosa*, *A. paradoxum*, p. 241, N. Africa, SCHMIEDEKNECHT, Termes. Fuzetek xxiii : n. spp.
- Arthula* n. g. *Tryphonides*, p. 110, for *A. brunneicornis* n. sp., India, p. 112, CAMERON, Mem. Manchester Soc. xlv, No. 15.
- Asphragis bilineata*, Grenada, ASHMEAD, p. 269, Tr. ent. Soc. London 1900, n. sp.
- Anthyreodon* n. g. type *A. thoracicus* Ashm. (not described), ASHMEAD, p. 87, P. U. S. Mus. xxiii.
- Baliena* n. g. *Banchi*, p. 101, for *B. leptopus* n. sp., India, p. 102, CAMERON, Mem. Manchester Soc. xlv, No. 15.
- Banchogastra* n. g. *Ophionini*, type *B. nigra* Ashm., not described, ASHMEAD, p. 87, P. U. S. Mus. xxiii.
- Barylyta coarctata*, Australia, ASHMEAD, p. 352, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Bathymetis antipoda*, Chatham Ids., ASHMEAD, p. 624, Ent. News Philad. xi, n. sp.
- Brachycranium* n. n. for *Brachycephalus* Förster 1868, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Cænopimpla* n. g. for *ruficollis* n. sp., India, CAMERON, p. 99, Mem. Manchester Soc. xlv, No. 15.
- Callicryptus* n. g. type *Cryptus fasciatus* Br., ASHMEAD, p. 43, P. U. S. Mus. xxiii.
- Caltiephialtes* n. g. type *Pimpla xanthothorax*, ASHMEAD, p. 54, t. c.
- Camptocincta* n. g. near *Phytodietus*, for *C. variicornis* n. sp., Thuringia, SCHMIEDEKNECHT, p. 343, Zool. Jahrb. Syst. xiii.
- Canidiella* n. n. for *Canidia* Holmg. 1858, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Catoglyptus (Stiphrosomus) superbus*, Carthage, SCHMIEDEKNECHT, p. 237, Termes. Fuzetek xxiii, n. sp.
- Ceratogastra* n. n. for *Ceratoma*, Cresson 1865, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Charops uncinatus*, Grenada, ASHMEAD, p. 272, Tr. ent. Soc. London 1900, n. sp.
- Chasmius* n. n. for *Chasmodes* Wesm., ASHMEAD, p. 17, P. U. S. Mus. xxiii.
- Chromocryptus* n. g. type *C. albopictus* Ashm. (not described), ASHMEAD, p. 41, t. c.; *C. antipodalis*, Australia, ASHMEAD, p. 349, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Celocentrus absidiatus*, Croatia, TOSQUINET, p. 157, Ann. Soc. ent. Belgique xlv, n. sp.
- Compsocryptus* n. g. type *Cryptus calipterus* Say, ASHMEAD, p. 43, P. U. S. Mus. xxiii.
- Cremastus oculatus*, *arenosus*, p. 21, *partitus*, *caudatus*, *ornatus*, p. 22, *lucidus*, p. 23, *puberulus*, *variegatus*, *pictus*, p. 24, *annulatus*, *discoidalis*, p. 25, *variipes*, p. 26, *hungaricus*, p. 27, Hungary, SZÉPLIGETI, Termes. Fuzetek xxiii, n. spp.
- Cressonianus* n. g. type *Patroclus lectus* Cresson, ASHMEAD, p. 20, P. U. S. Mus. xxiii.
- Cryptoides* n. g. type *Cryptus purpuripennis* Cresson, ASHMEAD, p. 42, t. c.
- Cryptopteryx* n. g. type *C. columbianus* Ashm., not described, ASHMEAD, p. 42, t. c.
- Crypturopsis* n. g. type *Crypturus texanus* Ashm., ASHMEAD, p. 45, t. c.
- Cryptus 4-guttatus*, characters, KRIECHBAUMER, p. 350, Ent. Nachr. xxvi; *C. bovei* ♀, SCHMIEDEKNECHT, p. 245, Termes. Fuzetek xxiii.
- C. maurus*, Spain, TOSQUINET, p. 152, Ann. Soc. ent. Belgique xlv; *C. zaidensis*, p. 243, *hannibal*, p. 245, N. Africa, SCHMIEDEKNECHT, Termes. Fuzetek xxiii; *C. pulcherrimus*, Sokotra, KIRBY, p. 14, Liverp. Mus. iii : n. spp.



- Diadromus palliditarsis*, Switzerland, *theresæ*, Alsace, BERTHOUMIEU, p. 251, Bull. Soc. ent. France 1900, n. spp.
- Dieclotus alboculatus*, Lebanon, *rufatorius*, Tunis, BERTHOUMIEU, p. 250, t. c. n. spp.
- Echthrodoxa* n. g., p. 328, *Lissonotini* for *L. conflagrata* and *hians*, SCHMIEDEKNECHT, Zool. Jahrb. Syst. xiii.
- Echthrus angustatus*, Spain, TOSQUINET, p. 154, Ann. Soc. ent. Belgique xlv, n. sp.
- Ecphoropsis* n. n. for *Ecphora* Förster 1868, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Ephialtes persuasorius*, habits, GÜNTHER, Berlin ent. Zeitschr. xlv, S.B. p. 35.
- Epimecoideus* n. g. *Lissonotini* type *E. apicalis* Ashm., not described, ASHMEAD, p. 52, P. U. S. Mus. xxiii.
- Erigorgus purpuratus*, p. 172, *apollinis*, p. 174, Germany, KRIECHBAUMER, Ent. Nachr. xxvi, n. spp.
- Erythropimpla* n. g., type *E. abbottii* Ashm., not described, ASHMEAD, p. 57, P. U. S. Mus. xxiii.
- Euctenopus* n. g. type *E. zealandicus* Ashm., not described, ASHMEAD, p. 50, P. U. S. Mus. xxiii and *Euctenopus* n. g. near *Phytodietus*, p. 350, for *novazealandicus* n. sp., New Zealand, p. 351, ASHMEAD, P. Linn. Soc. N. S. Wales xxv.
- Eumexius tunetanus*, Tunis, SCHMIEDEKNECHT, p. 242, Termes. Fuzetek xxiii, n. sp.
- Euryproctus* (*Syndipnus*) *numidicus*, Tunis, SCHMIEDEKNECHT, p. 234, t. c. n. sp.
- Exochus pictus* var., SZÉPLIGETI, t. c. p. 29.
- Glyptogastra* n. g. type *G. hawaiiensis* Ashm., not described, ASHMEAD, p. 57, P. U. S. Mus. xxiii.
- Gnathophya* n. g., SCHMIEDEKNECHT, p. 159, for *Lissonota dorsalis* Gr. and *G. occidentalis* n. sp., Spain, p. 160, TOSQUINET, Ann. Soc. ent. Belgique xlv; *G.* n. g. *Pimplinarum*, p. 238, for *G. mediterranea* n. sp., Tunis, p. 239, SCHMIEDEKNECHT, Termes. Fuzetek xxiii.
- Harrimaniella* n. g. *Lissonotini*, type *H. yukakensis* Ashm., not described, ASHMEAD, p. 52, P. U. S. Mus. xxiii.
- Hadropimpla* n. g. *Pimplides*, p. 96, for *H. bilineata* n. sp., India, p. 97, CAMERON, Mem. Manchester Soc. xlv, No. 15.
- Hemiteles antarcticus*, Patagonia, TOSQUINET, p. 104, Ann. Soc. ent. Belgique xlv, n. sp.
- Herpestomus bilineatus*, p. 250, *annulipes*, p. 251, Tunis, BERTHOUMIEU, Bull. Soc. ent. France 1900, n. spp.
- Himertosoma* n. g. p. 393, near *Lampronota*, for *H. superba* n. sp., Egypt, p. 394, SCHMIEDEKNECHT, Zool. Jahrb. Syst. xiii.
- Hoplocryptus algericus*, Oran, SCHMIEDEKNECHT, p. 244, Termes. Fuzetek xxiii, n. sp.
- Ichneumon specularius*, France, BERTHOUMIEU, p. 56, Echange xvi; *I. perturbans*, Bremen, KRIECHBAUMER, p. 169, Ent. Nachr. xxvi : n. spp.
- Insurgus nigriceps*, St. Vincent, ASHMEAD, p. 273, Tr. ent. Soc. London 1900, n. sp.
- Ichnus gaullei*, La Bourboule, BERTHOUMIEU, p. 252, Bull. Soc. ent. France 1900, n. sp.
- Ischyrocnemopsis* n. g. type *Esochoides texanus* Cresson, ASHMEAD, p. 81, P. U. S. Mus. xxiii.
- Joppoceras* n. g. type *Cryptus dubiosum* Cresson, ASHMEAD, p. 39, t. c.
- Leptobatopsis* n. g. type *L. australiensis* Ashm., not described, ASHMEAD, p. 47, P. U. S. Mus. xxiii and *L.* n. g. *Acanitini*, for *L. australiensis* n. sp., Sydney, ASHMEAD, p. 349, P. Linn. Soc. N. S. Wales xxv.

- Limnerium* n. n. for *Limneria* Holmgr. 1888, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Liotryphon* n. n. for *Liogaster* Kriechb. 1890, ASHMEAD, p. 368, t. c.
- Lissoptimpla* Kr. (= *Xenopimpla* Cam.), CAMERON, p. 18, Tr. N. Zealand Inst. xxxii.
- Lissonota mutanda* n. n. for *basalis* Th., p. 377, SCHMIEDEKNECHT, Zool. Jahrb. Syst. xiii.
- L. atropos*, Hungary, p. 360, *picticoxis*, p. 369, *strigifrons*, p. 370, Thuringia, *thomsoni* (= *unicincta* Th. nec Holmgr.), Sweden, p. 373, *hungarica*, Hungary, p. 375, *excelsa*, Thuringia, p. 376, SCHMIEDEKNECHT, t. c.; *L. intermedia*, *punctulata*, p. 32, *quadrata*, *annulata*, *vaga*, p. 33, *opacula*, p. 34, *bicincta*, *rustitarsis*, p. 36, Hungary, SZÉPLIGETI, Termes. Füzetek xxiii; *T. monosticta*, *iridipennis*, Bremen, KRIECHBAUMER, p. 171, Ent. Nachr. xxvi; *L. formosa*, p. 162, *vigil*, p. 165, Sarepta, TOSQUINET, Ann. Soc. ent. Belgique xlv : n. spp.
- Listrodromus quinquepunctatus*, habits, MORLEY, pp. 186-188, Ent. Rec. xii; *L. quinqueguttatus*, bibliography, habits, MARY B. REDMAYNE, p. 164, Ent. Rec. xii.
- Megarhyssa* n. n. for *Thalessa* Holmgren 1869, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Meniscus variipes*, p. 36, *canaliculatus*, *signatus*, *caudatus*, *affinis*, p. 37, Hungary, SZÉPLIGETI, Termes. Füzetek xxiii, n. spp.
- Mesochorus grenadensis*, Grenada, ASHMEAD, p. 273, Tr. ent. Soc. London 1900, n. sp.
- Mesoleptus annulipes*, p. 103, *hasianus*, p. 104, India, CAMERON, Mem. Manchester Soc. xlv, No. 15, n. spp.
- Mesostenoides* n. g. type *Mesosternus albomaculatus* Cresson, ASHMEAD, p. 45, P. U. S. Mus. xxiii.
- Mesostenus grenadensis*, Grenada, ASHMEAD, p. 268, Tr. ent. Soc. London 1900, n. sp.
- Metarhyssa* n. g. type *M. bifasciata* Ashm., not described, ASHMEAD, P. U. S. Mus. xxiii.
- Mischoxorides* n. n. for *Clepticus* Hal. 1839, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Neopimpla* n. g. type *N. abbottii* Ashm., not described, ASHMEAD, p. 56, P. U. S. Mus. xxiii.
- Neurateles meridionalis*, Grenada, ASHMEAD, p. 269, Tr. ent. Soc. London 1900, n. sp.
- Opheltioideus* n. g. (?) type *O. johnsoni* Ashm., not described, ASHMEAD, p. 95, P. U. S. Mus. xxiii.
- Ophiogaster* n. n. for *Ophiodes*, Hartig 1840, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Ophion amoenus*, Sarepta, TOSQUINET, p. 167, Ann. Soc. ent. Belgique xlv; *O. flavocephalus*, Christmas Is., KIRBY, p. 82, Monogr. Christmas Island.
- Opisoxestus* n. g. type *O. ferrugineus* Ashm., not described, ASHMEAD, p. 40, P. U. S. Mus. xxiii.
- Paniscus*; revision of Russian, KOKUJEW, pp. 128-152, Horæ Soc. ent. Ross. xxxiv.
- Paniscus minor*, Budapest, SZÉPLIGETI, p. 29, Termes. Füzetek xxiii; *P. montanus*, Pamir, p. 132, *fuscicarpus*, p. 137, *silantjewi*, p. 138, *rossicus*, p. 139, *caucasicus*, *ineditus*, p. 140, *capito*, p. 141, *genalis*, p. 142, Transcaucasus, *schirjajewi*, p. 143, W. Siberia, *suranicus*, p. 144, *semenowi*, p. 145, *nomas*, p. 146, Transcaspien, KOKUJEW, Horæ Soc. ent. Ross. xxxiv : n. spp.
- Paracremastus* n. g. for *P. genalis* n. Füzetek xxiii, p. 28.
- Pezomachus*; notes on, EL

- P. nitens*, Spain, TosQUINET, p. 156, Ann. Soc. ent. Belgique xlv, n. sp.  
*Phaogenes acicularius*, Switzerland, BERTHOUMIEU, p. 252, Bull. Soc. ent. France 1900, n. sp.  
*Pimpla flavipes*, larval habits, DU BUYSSON, p. 164, t. c. 1900.  
*Pimplopterus* n. g. *Lissonotini* type *P. alaskensis* Ashm., not described, ASHMEAD, p. 52, P. U. S. Mus. xxiii.  
*Plagiotrypes* n. g. type *Ichn. concinnus* Say, ASHMEAD, p. 20, t. c.  
*Platylabus judaicus*, Jerusalem, p. 249, *maurus*, Tangier, p. 250, BERTHOUMIEU, Bull. Soc. ent. France 1900, n. spp.  
*Pleuroneurophion* n. g. type *P. hawaiiensis* Ashm., not described, ASHMEAD, p. 86, P. U. S. Mus. xxiii.  
*Polysphinctomorpha* n. g. *Pimplini*, type *P. luggeri* Ashm., not described, ASHMEAD, p. 59, t. c.  
*Pristomeridia* n. g. type *Porizon agilis* Cresson, ASHMEAD, p. 100, t. c.  
*Pseudamblyteles* n. g. type *Amblyteles palliatorius* Grav., ASHMEAD, p. 18, t. c.  
*Pseudengalta* n. g. *Pimplini* type *E. strigosa* Cam., ASHMEAD, p. 55, t. c.  
*Pycnophion* n. g. type *P. molokaiensis* Ashm., not described, ASHMEAD, p. 87, t. c.  
*Rhynchothyreus* n. n. for *Zarhynchus* Ashm. (below), ASHMEAD, p. 368, Canad. Ent. xxxii.  
*Sichelia hungarica*, Hungary, SZÉPLIGETI, p. 38, Termes. Fuzetek xxiii, n. sp.  
*Sphegophaga vesparum*, natural history, MORLEY, pp. 117-124, Ent. Mag. xxxvi; CHAPMAN, t. c. p. 135.  
*Stenodon pici*, Tunis, BERTHOUMIEU, p. 252, Bull. Soc. ent. France 1900, n. sp.  
*Stiboscopus thoracicus*, p. 267, *grenadensis*, p. 268, Grenada, ASHMEAD, Tr. ent. Soc. London 1900, n. sp.  
*Syzeuctus tenuifasciatus* n. n. for *punctiventris* Th., SCHMIEDEKNECHT, p. 345, Zool. Jahrb. Syst. xiii.  
*S. heluanensis*, Egypt, id. l. c.; *S. elegans*, p. 30, *bicolor*, *braunsii*, p. 31, Hungary, SZÉPLIGETI, Termes. Fuzetek xxiii : n. spp.  
*Thersilochus dorsalis*, St. Vincent, ASHMEAD, p. 273, Tr. ent. Soc. London 1900, n. sp.  
*Thyreodon grenadensis*, Grenada, ASHMEAD, p. 270, t. c. n. sp.  
*Tilgida* n. g. *Tryphonides*, p. 108, for *T. albitarsis* n. sp., India, p. 109, CAMERON, Mem. Manchester Soc. xlv, No. 15.  
*Tosquinetia* n. n. for *Obba* Tosq. 1896, ASHMEAD, p. 368, Canad. Ent. xxxii.  
*Trachynotus fuscipennis*, Spain, TosQUINET, p. 169, Ann. Soc. ent. Belgique xlv, n. sp.  
*Trevoria* n. g. *Lissonotini* type *T. yukatatensis* Ashm., not described, ASHMEAD, p. 50, P. U. S. Mus. xxiii.  
*Trichistus discretus*, Hungary, SZÉPLIGETI, p. 29, Termes. Fuzetek xxiii, n. sp.  
*Trogomorpha* n. g. type *Ichneumon trogiformis* Cresson, ASHMEAD, p. 15, P. U. S. Mus. xxiii.  
*Tryphon tunetanus*, p. 235, *punicus*, p. 236, Tunis, SCHMIEDEKNECHT, Termes. Fuzetek xxiii, n. spp.  
*Xenacis hungarica*, Hungary, SZÉPLIGETI, p. 30, t. c. n. sp.  
*Xenocornia* n. g. near *Cryptopimpla*, p. 334, for *X. solitaria* n. sp., Thuringia, p. 335, SCHMIEDEKNECHT, Zool. Jahrb. xiii.  
*Zarhynchus* n. g. type *Tryphon nasutus* Cresson, ASHMEAD, p. 59, P. U. S. Mus. xxiii [cf. *Rhynchothyreus* above].  
*Zonocryptus* n. g. type *Cryptus sphingis* Ashm., not described, ASHMEAD, p. 40, P. U. S. Mus. xxiii.  
*Zonopimpla* n. g. type *Z. albicincta* Ashm., not described, ASHMEAD, p. 55, t. c.

*Zootrophes fuscatus*, Hungary, SZÉPLIGETI, p. 29, Termes. Fuzetek xxiii, n. sp.

## BRACONIDÆ and ALYSIIDÆ.

*Alysiidæ*, a separate family, characters and tables of genera, ASHMEAD, pp. 103-110, P. U. S. Mus. xxiii.

Notes on anatomy of larva parasitic on a *Psychid* from Timbuctoo, VAYSSIÈRE & BORDAS (1353).

*Acanthobracon* n. g. p. 100, for *A. lagopus* n. sp., Colombia, p. 103, KRIECHBAUMER, Berlin. ent. Zeitschr. xlv.

*Acelius australiensis*, Australia, ASHMEAD, p. 355, P. Linn. Soc. N. S. Wales xxv, n. sp.

*Ænigmostomus* n. g. type *Microdus longipalpis* Cresson, ASHMEAD, p. 128, P. U. S. Mus. xxiii.

*Alysiidæ*, as a distinct family with 3 subfamilies, ASHMEAD, p. 625, Ent. News Philad. xi.

*Amicophidea* n. g. type *Zelee pallidiventris* Prov., ASHMEAD, p. 118, P. U. S. Mus. xxiii.

*Apanteles antipoda*, p. 355, *australiensis*, p. 356, Australia, ASHMEAD, P. Linn. Soc. N. S. Wales xxv; *A. grenadensis*, Grenada, p. 278, *herbertii*, *sordidus*, *sancti-vicenti*, p. 279, *xanthaspis*, p. 280, St. Vincent, ASHMEAD, Tr. ent. Soc. London 1900 : n. spp.

*Asobara antipoda*, Chatham Ida., ASHMEAD, p. 625, Ent. News Philad. xi, n. sp.

*Atanycolus nova-guinensis*, p. 52, *major*, *tricolor*, p. 53, New Guinea, SZÉPLIGETI, Termes. Fuzetek xxiii, n. spp.

*Aulonotus* n. n. for *Holconotus* Förster 1862, ASHMEAD, p. 368, Canad. Ent. xxxii.

*Austroopius* n. g. *Opiinæ*, for *A. nova-guineensis*, *lemiensis* n. spp., New Guinea, SZÉPLIGETI, p. 64, Termes. Fuzetek xxiii.

*Baryproctus* n. g. type *Bracon barypus* Marsh., ASHMEAD, p. 139, P. U. S. Mus. xxiii.

*Biosteres fulvus*, New Guinea, SZÉPLIGETI, p. 65, Termes. Fuzetek xxiii, n. sp.

*Biroia* n. g. *Agathinæ*, for *B. elegans* n. sp., New Guinea, SZÉPLIGETI, p. 62, t. c.

*Blastomorpha* n. g. *Braconinæ*, for *B. decorata* n. sp., New Guinea and *Br. intrudens* Sm., SZÉPLIGETI, t. c.

*Bracon punicus*, Tunis, SCHMIEDEKNECHT, p. 246, Termes. Fuzetek xxiii; *B. pauperatus*, p. 83, *firmus*, p. 84, India, CAMERON, Mem. Manchester Soc. xlv, No. 15; *B. ? nigrosignatus*, Java, ZEHTNER, pp. 8, 10, pl. figg. 11-13 (1428); *B. coriaceus*, New Guinea, SZÉPLIGETI, p. 55, Termes. Fuzetek xxiii; *B. musicalis*, Colombia, KRIECHBAUMER, p. 99, pl. i, fig. 3, Berlin. ent. Zeitschr. 1900 : n. spp.

*Cænocælius bicolor*, New Guinea, SZÉPLIGETI, p. 63, Termes. Fuzetek xxiii, n. sp.

*Callibracon* n. g. type *Bracon limbatus* Br., ASHMEAD, p. 138, P. U. S. Mus. xxiii and p. 358, P. Linn. Soc. N. S. Wales xxv.

*Callihormius* n. g. type *Pambolus bifasciatus* Ashm., not described, ASHMEAD, p. 148, P. U. S. Mus. xxiii.

*Calyptus bicolor*, Hungary, SZÉPLIGETI, p. 218, Termes. Fuzetek xxiii, n. sp.

*Campyloneurus* n. g. *Braconinæ*, for *C. bicolor*, p. 51, *ater*, p. 52, n. spp., New Guinea, SZÉPLIGETI, t. c.

*Cardiochiles fuscipennis*, *fasciatus*, New Guinea, SZÉPLIGETI, p. 60, n.

*Chelonogastra* n. g. *Braconini*, type *C. kosbeli* ASHMEAD, p. 139, P. U. S. Mus. xxiii.



- Chelonus fissus*, Hungary, SZÉPLIGETI, p. 218, Termes. Fuzetek xxiii; *C. rufipes*, *scrobiculatus*, *papua*, New Guinea, SZÉPLIGETI, p. 58, t. c. : n. spp.
- Chromomicrodus* n. g. type *C. abbotti* Ashm., not described, ASHMEAD, p. 129, P. U. S. Mus. xxiii.
- Celoides (Atanycolus) tunetensis*, Tunis, MARSHALL, p. 372, Bull. Mus. Paris 1900, n. sp.
- Celothorax*, characters, ASHMEAD, p. 275, Tr. ent. Soc. London 1900.
- C. laviceps*, St. Vincent, id. p. 276, t. c. n. sp.
- Cenophanes cingulatus*, Hungary, SZÉPLIGETI, p. 216, Termes. Fuzetek xxiii, n. sp.
- Compsobracon* n. g. type *Exothecus magnificus* Ashm., not described, ASHMEAD, p. 138, P. U. S. Mus. xxiii.
- Crassomicrodus* n. g. type *Microdus fulvescens* Cresson, ASHMEAD, p. 128, t. c.
- Cremnops bicolor*, p. 60, *xanthostigma*, p. 61, New Guinea, SZÉPLIGETI, Termes. Fuzetek xxiii, n. spp.
- Cryptopyge variegata*, Bolivia, *testacea*, E. India, SZÉPLIGETI, p. 283, t. c. n. spp.
- Curriea* n. g. *Braconini*, type *C. fasciatipennis* Ashm., not described, ASHMEAD, p. 137, P. U. S. Mus. xxiii.
- Delmira* n. g. anomalous, near *Bracon*, p. 87, for *D. triplagiata* n. sp., India, p. 88, CAMERON, Mem. Manchester Soc. xlv, No. 15.
- Diachasma carpocapsa*, New Zealand, ASHMEAD, p. 357, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Diolcogaster* n. g. type *Microgaster melligaster* Prov., ASHMEAD, p. 132, P. U. S. Mus. xxiii.
- Diospilus mazimus*, Hungary, SZÉPLIGETI, p. 219, Termes. Fuzetek xxiii, n. sp.
- Disophrys erythrocephala*, p. 91, *D. ?*, *ophippium*, p. 93, India, CAMERON, Mem. Manchester Soc. xlv, No. 15; *D. elegans*, New Guinea, SZÉPLIGETI, p. 61, Termes. Fuzetek xxiii : n. spp.
- Doryctes strigatus*, E. Russia, KOKUJEW, p. 561, Horæ Soc. ent. Ross. xxxiv; *D. ligaster*, Tunis, MARSHALL, p. 372, Bull. Mus. Paris 1899 : n. spp.
- Doryctomorpha* n. g. *Doryctini*, p. 629, for *D. antipoda* n. sp., Chatham Ids., p. 630, ASHMEAD, Ent. News Philad. xi, and p. 144, P. U. S. Mus. xxiii.
- Ecphylopsis* n. g. *Pambolini*, type *E. nigra* Ashm., not described, ASHMEAD, p. 146, t. c.
- Epimicrodus* n. g. type *Microdus diversus* Cresson, ASHMEAD, p. 129, t. c.
- Epirhyssalus* n. g. type *E. californicus* Ashm., not described, ASHMEAD, p. 142, t. c.
- Episigalphus* n. g. type *E. minutissimus* Ashm., ASHMEAD, p. 125, t. c.
- Euagathis* n. g. *Agathinae* for *E. bifasciata*, p. 62, *fulvipennis*, *novaguineensis*, p. 63, n. spp., New Guinea, SZÉPLIGETI, Termes. Fuzetek xxiii.
- Eucorystoides* n. n. for *Eucorystes* Marshall 1888, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Eujoppa* n. g. for *E. krieckbaumeri* n. sp., Brazil, SZÉPLIGETI, Termes. Fuzetek xxiii.
- Eumacrocentrus* n. g. type *Gymnoscelis americanus* Cresson, ASHMEAD, p. 120, P. U. S. Mus. xxiii.
- Euphoridea* n. g. *Aphidiini*, type *E. claripennis* Ashm., not described, ASHMEAD, p. 116, t. c.
- Euphoriella* n. g. type *Labeo incertus* Ashm., ASHMEAD, p. 116, t. c.
- Euvrobracon* n. g. type *Bracon penetrator* Sm., ASHMEAD, p. 140, t. c.
- Glyptocolastes* n. g. *Rhyssalini*, type *G. texanus* Ashm., not described, ASHMEAD, p. 142, t. c.

- Glyptodoryctes* n. g. type *Hetreospilus caryæ* Ashm., not described, ASHMEAD, p. 144, t. c.
- Glyptomorpha thoracica*, Grenada, ASHMEAD, p. 295, Tr. ent. Soc. London 1900, n. sp.
- Harkeria* n. g. *Euphorides*, p. 537, for *H. rufa* n. sp., England, p. 538, CAMERON, Ann. Nat. Hist. vi.
- Hecabolus hungaricus*, Hungary, SZÉPLIGETI, p. 216, Termes. Fuzetek xxiii, n. sp.
- Heterospilus terminalis*, Grenada, ASHMEAD, p. 297, Tr. ent. Soc. London 1900, n. sp.
- Holojoppa* n. g. for *H. grandis* n. sp., Bolivia, SZÉPLIGETI, p. 289, Termes. Fuzetek xxiii.
- Hoplitalysia* n. g. *Alysiidæ*, type *H. slosonæ* Ashm., not described, ASHMEAD, p. 105, P. U. S. Mus. xxiii.
- Hypodoryctes* n. g., pp. 542, 548, for *H. sibiricus* n. sp., W. Siberia, p. 550, KOKUJEW, Horæ Soc. ent. Ross. xxiv.
- Hypomicrogaster* n. g. type *Microgaster zonarius* Say, ASHMEAD, p. 132, P. U. S. Mus. xxiii.
- Ichneutidea* n. g. type *Ichneutes abdominalis* Cresson, ASHMEAD, p. 133, t. c.
- Iphiaulax gracilis*, p. 53, *striatus*, p. 54, New Guinea, SZÉPLIGETI, Termes. Fuzetek xxiii; *I. trinotata*, p. 359, *australiensis*, p. 360, Australia, ASHMEAD, P. Linn. Soc. N. S. Wales xxv; *I. grenadensis*, Grenada, ASHMEAD, p. 294, Tr. ent. Soc. London 1900 : n. spp.
- Ichnopus bifasciatus*, Brazil, *scutellaris*, Honduras, p. 286, *rufus*, Brazil?, p. 287, SZÉPLIGETI, Termes. Fuzetek xxiii, n. sp.
- Kahlia* n. g. *Alysiidæ*, type *K. flavipes* Ashm., not described, ASHMEAD, p. 107, P. U. S. Mus. xxiii.
- Lamadatha* n. g. near *Dacnusa*, p. 538, for *L. testaceipes*, n. sp., Scotland, p. 539, CAMERON, Ann. Nat. Hist. vi.
- Liongalphus* n. g. type *L. politus* Ashm., not described, ASHMEAD, p. 125, P. U. S. Mus. xxiii.
- Lysitermus terminalis* referred to *Ecphyllus* and *L. fascipennis* to *Telebolus*, ASHMEAD, p. 296, Tr. ent. Soc. London 1900.
- Macrocentrus* sp., Java, ZEHNTNER, p. 4, pl., figg. 5-8 (1425).
- Macrodyctium* n. g. type *Bracon euraæ* Ashm., ASHMEAD, p. 138, P. U. S. Mus. xxiii.
- Macrojoppa nigra*, Chiriqui, p. 283, *rufa*, *hematogaster*, p. 284, *pulchra*, *similis*, p. 285, S. America, SZÉPLIGETI, Termes. Fuzetek xxiii, n. spp.
- Macrostromion* n. g. *Rhogadiniæ*, for *M. bicolor* n. sp., New Guinea, SZÉPLIGETI, p. 57, t. c.
- Megajoppa* n. g. for *lineola* Brullé, SZÉPLIGETI, p. 289, t. c.
- Megalommum* n. g. *Braconinæ*, p. 50, for *M. oculatum*, *biroi*, n. spp., New Guinea, p. 51, SZÉPLIGETI, t. c.
- Melanobracon* n. g. type *Bracon simplex* Cresson, ASHMEAD, p. 138, P. U. S. Mus. xxiii.
- Mesocentrus* n. g. *Rhogadiniæ*, for *M. crassipes* n. sp., New Guinea, SZÉPLIGETI, p. 56, Termes. Fuzetek xxiii.
- Meteoridea* n. g. *Microdini*, type *M. longiventris* Ashm., not described, ASHMEAD, p. 129, P. U. S. Mus. xxiii.
- Meteorus antipodalis*, Australia, ASHMEAD, p. 353, P. Linn. Soc. N. S. Wales xxv; *M. australis*, Argentina, TOSQUINET, p. 104, Ann. Soc. ent. Belgique xlv : n. spp.
- Microbracon thalpocharis*, *tricolor*, Australia, ASHMEAD, p. 359, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Microgaster pinos* Cr. referred to *Urogaster*, ASHMEAD, p. 281, Tr. ent. Soc. London 1900.
- Microjoppa bicolor*, Chiriqui, *fuscipennis*, p. 1

- brasilensis*, *sinuata*, p. 279, *flavipennis*, *boliviensis*, *similis*, p. 280, *setosa*, *minor*, *elegans*, p. 281, *semihyalina*, p. 282, S. America, SZÉPLIGETI, Termes. Fuzetek xxiii, n. spp.
- Microplitis maculipennis*, New Guinea, SZÉPLIGETI, p. 60, t. c.; *M. carinata*, St Vincent, ASHMEAD, p. 293, Tr. ent. Soc. London 1900 : n. spp.
- Neoblaeus* n. g. type *N. rufipes* Ashm., not described, ASHMEAD, p. 122, P. U. S. Mus. xxiii.
- Neophylax* n. g. *Zetini*, type *N. snyderi* Ashm., ASHMEAD, p. 119, t. c.
- Cenonogastra* n. g. type *Mesocrina microrhopala* Ashm., ASHMEAD, p. 105, t. c.
- Oresinus* n. g. *Orgilini*, type *Eubadizon maculiventris* Cress., ASHMEAD, p. 123, t. c.
- Oreba* n. g. near *Microdus*, p. 94, for *O. purpurea* n. sp., India, p. 95, CAMERON, Mem. Manchester Soc. xlv, No. 15.
- Orgilomorpha* n. g. *Orgilini*, type *Ganychorus gelichia* Ashm., ASHMEAD, p. 123, P. U. S. Mus. xxiii.
- Orgiloneura* n. g. *Microdini*, type *O. antipoda* Ashm., not described, ASHMEAD, p. 129, t. c. and *O. n. g.* near *Microdus*, p. 354, for *O. antipoda* n. sp., Australia, p. 355, ASHMEAD, P. Linn. Soc. N. S. Wales xxv.
- Ontsira* n. g. near *Doryctes*, p. 89, for *O. reticulata* n. sp., India, p. 90 CAMERON, Mem. Manchester Soc. xlv, No. 15.
- Opiellus* n. n. for *Zetetes* Förster 1862, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Opius niloticus*, Egypt, SCHMIEDEKNECHT, p. 247, Termes. Fuzetek xxiii; *O. grenadensis*, *tantillus*, Grenada, ASHMEAD, p. 294, Tr. ent. Soc. London 1900 : n. spp.
- Pambolidea* n. g. type *P. yuma* Ashm., not described, ASHMEAD, p. 147, P. U. S. Mus. xxiii.
- Paracophylus* n. g. *Pambolini*, for *P. websteri* Ashm., not described, ASHMEAD, p. 147, t. c.
- Parapanteles* n. g. type *Apanteles aletia* Riley, ASHMEAD, p. 131, t. c.
- Pedinopelte maculipennis*, *mocsaryi*, S. America, *orientalis*, Celebes, p. 287, SZÉPLIGETI, Termes. Fuzetek xxiii, n. spp.
- Phanerotoma katkowi*, Saratowa, p. 30, *semenowi*, Transcaspian, p. 32, KOKUJEW, Horæ Soc. ent. Ross. xxxii; *P. nova-guineensis*, New Guinea, SZÉPLIGETI, p. 59, Termes. Fuzetek xxiii; *P. australiensis*, Australia, ASHMEAD, p. 354, P. Linn. Soc. N. S. Wales xxv : n. spp.
- Phanerotomella* n. g. *Chelonina*, for *P. longipes*, *sculpturata* n. spp., New Guinea, SZÉPLIGETI, p. 59, Termes. Fuzetek xxiii; *P. nigra*, *kerteszi*, Hungary, SZÉPLIGETI, p. 218, t. c. : n. spp.
- Platybracon* n. g. *Braconina*, for *P. depressus* n. sp., New Guinea, SZÉPLIGETI, p. 49, t. c.
- Pecilojoppa annulicornis*, p. 285, *concolor*, p. 286, S. America, SZÉPLIGETI, t. c. n. spp.
- Protaphidius* n. n. for *Colonus* Förster 1862, ASHMEAD, p. 368, Canad. Ent. xxxii.
- Protopanteles parallelis*, St Vincent, ASHMEAD, p. 281, Tr. ent. Soc. London 1900, n. sp.
- Protomicroplitis* n. g. type *P. germani* Ashm., not described, ASHMEAD, p. 132, P. U. S. Mus. xxiii.
- Provancheria* n. g. *Alysida*, type *Eubadizon gracilis* Prov., ASHMEAD, p. 109, t. c.
- Pseudapanteles sancti-vicenti*, p. 291, *brunneus*, *annulicornis*, p. 292, St Vincent, ASHMEAD, Tr. ent. Soc. London 1900, n. spp.
- Rhaconotus scaber*, S. Russia, KOKUJEW, p. 545, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Rhogas rugulosus* var. n., SZÉPLIGETI, p. 217, Termes. Fuzetek xxiii.
- R. ? mandibularis*, India, CAMERON, p. 85, Mem. Manchester Soc. xlv,

- No. 15; *R. oculatus*, New Guinea, SZÉPLIGETI, p. 57, Termes. Fuzetek xxiii : n. spp.
- Sactopus* n. g. *Pambolini*, p. 146, for *S. schwarzi* Ashm., not described, ASHMEAD, p. 146, P. U. S. Mus. xxiii.
- Schauinslandia* n. g. *Helconini*, type *S. femorata* Ashm., not described, ASHMEAD, p. 120, t. c. and *S. n. g.* near *Helcon*, for *S. femorata*, p. 627, *alfkeni*, *pallidipes*, p. 628, n. spp., Chatham Ids., ASHMEAD, Ent. News Philad. xi.
- Spathius minutus*, *tricolor*, New Guinea, SZÉPLIGETI, p. 55, Termes. Fuzetek xxiii, n. sp.
- Spinaria trimaculata*, India, CAMERON, p. 81, Mem. Manchester Soc. xlv, No. 15; *S. beccarii*, Celebes, MANTERO, p. 543, cut., Ann. Mus. Genova xl : n. spp.
- Tetragonochora brasiliensis*, Amazona, SZÉPLIGETI, p. 288, Termes. Fuzetek xxiii, n. sp.
- Tricyphus vulpinus*, N. America, SZÉPLIGETI, p. 288, t. c. n. sp.
- Trigonospilus* n. g. *Opiniæ*, type *T. hopkinsi* Ashm., not described, ASHMEAD, p. 134, P. U. S. Mus. xxiii.
- Trisearthrum* n. g. type *Dimeris maculipennis* Ashm., not described, ASHMEAD, p. 146, t. c.
- Tropidobracon* n. g. type *Bracon gastroides* Ashm., ASHMEAD, p. 139, t. c.; *T. fuscitarsis*, Grenada, ASHMEAD, p. 296, Tr. ent. Soc. London 1900, n. sp.
- Urogaster balthazari*, Grenada, *nigriceps*, p. 284, *meridionalis*, St Vincent, *grenadensis*, Grenada, p. 285, *disputabilis*, *vulgaris*, p. 286, St Vincent, *solitarius*, Grenada, *leucopus*, St Vincent, p. 287, *xanthopus*, *imitator*, p. 288, *leucostigmus*, *aciculatus*, Grenada, p. 289, *rhomboidalis*, St Vincent, p. 290, ASHMEAD, Tr. ent. Soc. London 1900, n. spp.
- Wachsmannia* n. g. *Doryctineæ*, for *W. maculipennis* n. sp., Hungary, SZÉPLIGETI, p. 217, Termes. Fuzetek xxiii.
- Zaglyptogastra* n. g. *Braconini*, type *Z. abbotti* Ashm., not described, ASHMEAD, p. 137, P. U. S. Mus. xxiii.
- Zamegaspilus* n. g. *Evothecini*, type *Z. hopkinsi* Ashm., not described, ASHMEAD, p. 141, t. c.
- Zelomorpha* n. g. *Microdini*, type *Z. arizonensis* Ashm., not described, ASHMEAD, p. 129, t. c.

## TRIGONALIDÆ, STEPHANIDÆ, EVANIIDÆ.

- Trigonalidæ*, ASHMEAD corrects his table of classification in connection with this family, Canad. ent. xxxii, p. 145.
- Schlettererius* n. g. type *Stephanus cinctipes* Cresson, ASHMEAD, p. 150, P. U. S. Mus. xxiii.
- Evaniidæ*, the subfamilies and genera, ASHMEAD, pp. 6-8, t. c.
- Aulacus iridipennis*, India, CAMERON, p. 80, Mem. Manchester Soc. xlv, No. 15, n. sp.
- Evania minuta* Öl. and *minuta* Schlett. distinguished, KIEFFER, p. 816, Ann. Soc. ent. France lxxviii.
- Evania levigata*, oviposition, SURVEYOR (1296).
- Gasteruption goberti* and *pedemontanum*, distinguished, KIEFFER, p. 819, Ann. Soc. ent. France lxxviii.
- Pristaulacus* n. g., *Evaniidæ*, p. 813, for *P. chlapowskii*, Russia, p. 814, *bimaculatus*, Daghestan, p. 815, n. spp., and *A. morawitsi*, *patrasi*, KIEFFER, t. c.; list of genus, KIEFFER, p. 338, Bull. Soc. ent. France 1900.



## CHALCIDIDÆ.

- Annotated list of species recently reared, with names of the hosts, and notes on habits, MARCHAL, pp. 102-112, Ann. Soc. ent. France lxi.
- Classification of *Encyrtidæ*, and the characters of the genera of *Encyrtinæ*, ASHMEAD (37).
- Australian fig-insects, FROGGATT (466).
- Mymaridæ* of amber and copal, MEUNIER (902, 903).
- Ablerus puncticeps*, Java, ZEHTNER, Plantenluizen viii, p. 10, pl. ii, figg. 15-17, n. sp.
- Aerocornus megastigmus* ♀, ASHMEAD, p. 256, Tr. ent. Soc. London 1900, n. sp.
- Adelencyrtus* n. g. type *Encyrtus chionaspidis* How., ASHMEAD, p. 401, P. U. S. Mus. xxii.
- Ænaspis chapadae*, Brazil, ASHMEAD, p. 371, t. c. n. sp.
- Agamerion ceruleiventris*, Australia, ASHMEAD, p. 340, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Anagyrus pallidipes*, N. America, ASHMEAD, p. 354, P. U. S. Mus. xxii, n. sp.
- Anastatus alboclavus*, p. 261, *aurifrons*, p. 262, St Vincent, ASHMEAD, Tr. ent. Soc. London 1900, n. spp.
- Anusia neomexicana*, N. America, ASHMEAD, p. 355, P. U. S. Mus. xxii, n. sp.
- Aphelinus simplex*, Java, ZEHTNER, Plantenluizen suikerriet Java ii, 1897, p. 19, pl. i, figg. 18, 19; *A. howardii*, Grenada, ASHMEAD, p. 264, Tr. ent. Soc. London 1900 : n. spp.
- Aphidencyrtus* n. g. type *Encyrtus aphidiphagus* Ashm., ASHMEAD, p. 398, P. U. S. Mus. xxii.
- Aphytis* n. g. *Aphelininae*, for *A. chilensis* n. sp., Chili, HOWARD, p. 168, Canad. Ent. xxxii.
- Asemantus cecidomyia*, Sydney, ASHMEAD, p. 338, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Berecyrus floridanus*, N. America, ASHMEAD, p. 365, P. U. S. Mus. xxii, n. sp.
- Blastophaga picipes*, p. 250, *insularis*, p. 251, St Vincent, ASHMEAD, Tr. ent. Soc. London 1900, n. spp.
- Brachista pallida*, N. America, from eggs of *Odonata*, ASHMEAD, p. 616, Ent. News Philad. xi, n. sp.
- Brachyscelidiphaga* n. g. *Pteromalidæ*, for *B. flava* n. sp., Sydney, ASHMEAD, p. 343, P. Linn. Soc. N. S. Wales xxv.
- Calosoter chrysideus*, St Vincent, ASHMEAD, p. 257, Tr. ent. Soc. London 1900, n. sp.
- Centrobia odonatae*, N. America, ASHMEAD, p. 616, Ent. News Philad. xi, n. sp.
- Cerchysius pulchricornis* and *terebrator* How. referred to *Anagyrus*, ASHMEAD, p. 262, Tr. ent. Soc. London 1900.
- C. australiensis*, Australia, ASHMEAD, p. 342, P. Linn. Soc. N. S. Wales xxv; *C. elasmoceri*, p. 379, *hubbardii*, p. 380, N. America, ASHMEAD, P. U. S. Mus. xxii : n. spp.
- Chalcis* sp., Java, ZEHTNER, p. 12, pl., figg. 9, 10 (1428).
- Chestomorpha* n. g. *Encyrtinae*, for *C. biformis* n. sp., New Mexico, ASHMEAD, p. 370, P. U. S. Mus. xxii.
- Chrysoplatycerus howardii*, Mexico, ASHMEAD, p. 405, t. c. n. sp.
- Coccidencyrtus* n. g. for *Encyrtus ensifer* How., ASHMEAD, p. 383, t. c.
- Coccobius diaspidis*, N. America, ASHMEAD, p. 408, t. c. n. sp.
- Coccophoctonus* n. g. *Encyrtinae*, for *C. dactylopii* n. sp., Australia, ASHMEAD, p. 375, t. c.

- Calocyba* n. g. *Pteromalidæ*, for *C. nigrocincta* n. sp., Sydney, ASHMEAD, P. Linn. Soc. N. S. Wales xxv.
- Derostenus albipes*, Java, ZEHTNER, p. 8 (1428), n. sp.
- Diaulomorpha* n. g. *Eulophinæ*, for *D. australiensis* n. sp., Australia, ASHMEAD, P. Linn. Soc. N. S. Wales xxv.
- Dinocarsis*, habits, HOWARD, p. 248, Ent. Mag. xxxvi.
- Dinoura* n. g. *Cleonyminæ*, for *D. auriventris*, p. 341, *cyanea*, p. 342, n. spp., Australia, ASHMEAD, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Elasmus* sp., Java, ZEHTNER, pp. 1-4, pl., figg. 1-4 (1428).
- Encarsia* sp., injurious to sugar-cane in Java, ZEHTNER, Plantenluizen viii, p. 18, pl. ii, figg. 18, 19.
- E. flavoscutellum*, Java, ZEHTNER, p. 12, pl. i, figg. 5, 6, op. cit. x, n. sp.
- Encyrtcephalus* n. g. *Chalcidina*, for *E. simplicipes* n. sp., Australia, ASHMEAD, p. 334, P. Linn. Soc. N. S. Wales xxv.
- Entedon pulcher* How., referred to *Closterocercus*, ASHMEAD, p. 263, Tr. ent. Soc. London 1900.
- Epiencyrtus* n. g. type *Encyrtus thyreodontis* Ashm., ASHMEAD, p. 396, P. U. S. Mus. xxii.
- Euchrysa busckii*, Porto Rico, ASHMEAD, p. 256, Tr. ent. Soc. London 1900, n. sp.
- Eulophus albitarsis*, Europe and N. America, ASHMEAD, p. 623, Ent. News Philad. xi, n. sp.
- Eupelmus xambei*, E. Pyrenees, GIARD, p. 81, Bull. Soc. ent. France 1900; *E. antipoda*, Sydney, ASHMEAD, p. 342, P. Linn. Soc. N. S. Wales xxv; *E. albomaculatus*, *cyanicollis*, p. 259, *pallidipes*, *cupreicollis*, *sulcatus*, p. 260, St Vincent, ASHMEAD, Tr. ent. Soc. London 1900 : n. spp.
- Euplectrus australiensis*, Australia, ASHMEAD, p. 347, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Eurytoma australiensis*, p. 335, *eucalypti*, p. 336, *binotata*, p. 337, Australia, ASHMEAD, t. c. n. spp.
- Habrolepopteryx* n. g., type *Psilophrys pulchripennis* Ashm., ASHMEAD, p. 359, P. U. S. Mus. xxii.
- Halticella* sp., Java, ZEHTNER, p. 28, pl. ii, figg. 24, 25, Plantenluizen x.
- H. bicolor*, Australia, ASHMEAD, p. 333, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Hemaneisus* n. g. *Encyrtina*, for *H. confusus* n. sp., N. America, ASHMEAD, p. 374, P. U. S. Mus. xxii.
- Hemencyrtus* n. g. *Encyrtina*, p. 374, for *H. herbertii* n. sp., Brazil, p. 375, ASHMEAD, t. c.
- Henicopygus* n. g. *Encyrtina*, p. 355, for *H. subapterus* n. sp., Colorado, p. 356, ASHMEAD, t. c.
- Holencyrtus* n. g. type *Aphycus niger* Ashm., ASHMEAD, p. 394, t. c.
- Hyperteles polymæ*, Illinois, from *Odonata* eggs, ASHMEAD, p. 615, Ent. News Philad. xi, n. sp.
- Idarnis australis*, Sydney, FROGGATT, p. 452, pl., fig. 10, Agric. Gaz. N. S. W. xi, n. sp.
- Isodromus niger*, *atriventris*, N. America, ASHMEAD, p. 379, P. U. S. Mus. xxii, n. spp.
- Leucospis insularis*, Sokotra, KIRBY, p. 13, Bull. Liverp. Mus. iii, n. sp.
- Liothorax melanocera*, N. America, ASHMEAD, p. 363, P. U. S. Mus. xxii, n. sp.
- Litus maculipennis*, St Vincent, ASHMEAD, p. 265, Tr. ent. Soc. London 1900, n. sp.
- Megastigmus asteri*, p. 332, *brachyscelidis*, p. 333, Sydney, ASHMEAD, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Meromyzobia* n. g. type *Ericydus maculipennis* Ashm., p. 349, with *flava*, *unifasciata* n. spp., S. America, p. 350, ASHMEAD, P. U. S. Mus. xxii.

- Metagea kirbyi*, p. 337, *rufiventris*, p. 338, Australia, ASHMEAD, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Metapelma cubensis*, Cuba, ASHMEAD, p. 257, Tr. ent. Soc. London 1900, n. sp.
- Microterys cincticornis*, p. 390, *marginatus*, p. 392, N. America, ASHMEAD, P. U. S. Mus. xxii, n. spp.
- Ooencyrtus* n. g. type *Encyrtus anasa* Ashm., ASHMEAD, p. 381, t. c.
- Pachyneuron laticeps*, Grenada, ASHMEAD, p. 263, Tr. ent. Soc. London 1900, n. sp.
- Parencyrtus* n. g. for *P. brasiliensis* n. sp., Chapada, ASHMEAD, p. 368, P. U. S. Mus. xxii.
- Physcus flavidus*, Java, ZEHTNER, Plantenluizen suikerriet Java v, 1898, p. 5, pl., fig. 11, n. sp.
- Physothorax pallidus*, St Vincent, ASHMEAD, p. 254, Tr. ent. Soc. London 1900, n. sp.
- Pleistodontes imperialis*, ♂ forms, FROGGATT, pp. 449-451, Agric. Gaz. N. S. W. xi, pl., figg. 2-9.
- Pleurotropis thoracica*, Java, ZEHTNER, p. 11, pl., figg. 14-18 (1428), n. sp.
- Polynema needhami*, N. America, from eggs of *Odonata*, ASHMEAD, p. 617, Ent. News Philad. xi; *P. magniceps*, p. 265, *albicora*, St Vincent, *grenadensis*, p. 266, Grenada, ASHMEAD, Tr. ent. Soc. London 1900 : n. spp.
- Prospalta triatis*, Java, ZEHTNER, Plantenluizen suikerriet Java i (1896), p. 11, pl., figg. 17-21, n. sp.
- Pseudencyrtus* n. g. type *Encyrtus cecidomyiæ* How., ASHMEAD, p. 396, P. U. S. Mus. xxii.
- Psyllaphagus* n. g. type *Encyrtus pachypsyllæ* How., ASHMEAD, p. 382, t. c.
- Pteroptrix maskelli*, New Zealand, ASHMEAD, p. 346, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Rhytidothorax* n. g. *Encyrtinæ*, for *R. marlatti* n. sp., Kansas, ASHMEAD, p. 377, P. U. S. Mus. xxii.
- Signiphora nigra*, *dactylopii*, *unifasciata*, N. America, *australiensis*, Australia, *noacki*, Brazil, p. 410, *bifasciata*, W. Indies, *mexicana*, Mexico, *rhizococci*, Brazil, p. 411, *aleyrodii*, W. Indies, *coquilleti*, N. America, *aspidioli*, *townsendi*, Mexico, p. 412, ASHMEAD, t. c. : n. spp.
- Sphaeropisthus annulicornis*, *auriceps*, Florida, ASHMEAD, p. 369, t. c. n. spp.
- Stilbula knuthii*, Java, ALFKEEN, p. 191, Ent. Nachr. xxvi, n. sp.
- Sycophila bicolor*, p. 252, *incerta*, p. 253, St Vincent, ASHMEAD, Tr. ent. Soc. London 1900, n. spp.
- Syrphophagus* n. g. type *Encyrtus mesograptæ* Ashm., ASHMEAD, p. 397, P. U. S. Mus. xxii.
- Systole koebelei*, Australia, ASHMEAD, p. 335, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Systolomorpha* n. g. *Cleonymidæ* for *S. thiridopterygis* n. sp., Australia, ASHMEAD, p. 339, t. c.
- Tanaostigmodes mayri*, Grenada, ASHMEAD, p. 262, Tr. ent. Soc. London 1900, n. sp.
- Terobiella* n. g. *Pteromalidæ* for *T. flavifrons* n. sp., Australia, ASHMEAD, p. 343, P. Linn. Soc. N. S. Wales xxv.
- Tetracnemopsis* n. g. type *Tetracnemus westwoodii* Cock., ASHMEAD, p. 358, P. U. S. Mus. xxii.
- Tetralophidea* n. g. *Encyrtinæ* for *T. bakeri* n. sp., Colorado, ASHMEAD, p. 348, t. c.
- Tetralophiellus* n. g. *Encyrtinæ* for *T. brevicollis* n. sp., Florida, ASHMEAD, p. 357, t. c.
- Tetrapus antillarum*, St Vincent, ASHMEAD, p. 251, Tr. ent. Soc. London 1900, n. sp.

- Tetrastichodes froggatti*, Sydney, ASHMEAD, p. 346, P. Linn. Soc. N. S. Wales xxv, n. sp.  
*Tetrastichus* sp., Java, ZEHNTNER, p. 26, pl. ii, figg. 26, 27, Plantenluizen x.  
*T. polynemæ*, N. America, from eggs of *Odonata*, ASHMEAD, p. 616, Ent. News Philad. xi; *T. flavus*, Grenada, ASHMEAD, p. 264, Tr. ent. Soc. London 1900: n. spp.  
*Thaumazura rubrofemoratis*, Sydney, ASHMEAD, p. 341, P. Linn. Soc. N. S. Wales xxv, n. sp.  
*Tineophoctonus* n. g. type *Phænodiscus armatus* Ashm., ASHMEAD, p. 351, P. U. S. Mus. xxii.  
*Tomocera californica* How. = (*Moranila testaceiceps* Cam.), ASHMEAD, p. 345, P. Linn. Soc. N. S. Wales xxv.  
*Torymus eucalypti*, Australia, ASHMEAD, p. 331, t. c. n. sp.  
*Zaomma* n. g. for *Encyrtus argentipes* How., ASHMEAD, p. 401, P. U. S. Mus. xxii.  
*Zarhopalus* n. g. *Encyrtinae* for *Z. sheldoni* n. sp., New York, ASHMEAD, p. 406, t. c.

## PROCTOTRYPIDÆ.

- Catalogue of Canadian *Proctotrypidæ*, HARRINGTON, with notes on habits, synonymy, dates, pp. 169-206, Tr. R. Soc. Canada v, Sect. 4.  
 A destroyer of eggs of cockroach, SURVEYOR (1296).  
 Notes on habits of six species, MARCHAL, p. 112, Ann. Soc. ent. France lxi.  
*Aclista caudata*, p. 199, *crassicornis*, p. 200, Canada, HARRINGTON, Tr. R. Soc. Canada v, Sect. 4, n. spp.  
*Aphanogmus insularis*, ASHMEAD, p. 241, Tr. ent. Soc. London 1900.  
*Ateleopterus longiceps*, Australia, ASHMEAD, p. 327, P. Linn. Soc. N. S. Wales xxv, n. sp.  
*Belyta rostrata*, Canada, HARRINGTON, p. 196, Tr. R. Soc. Canada v, Sect. 4, n. sp.  
*Caloteleia nigriceps*, Grenada, ASHMEAD, p. 243, Tr. ent. Soc. London 1900, n. sp.  
*Disogmus canadensis*, Canada, HARRINGTON, p. 193, Tr. R. Soc. Canada v, Sect. 4, n. sp.  
*Eritrissomerus pallipes*, Canada, HARRINGTON, p. 191, t. c. n. sp.  
*Hadronotus brevipennis*, Canada, HARRINGTON, p. 188, t. c. n. sp.  
*Hemilexodes canadensis*, Canada, HARRINGTON, p. 201, t. c. n. sp.  
*Labeo grenadensis*, Grenada, ASHMEAD, p. 235, Tr. ent. Soc. London 1900, n. sp.  
*Labolips* sp., injurious to sugar-cane in Java, ZEHNTNER, p. 11, pl. ii, figg. 13, 14, Plantenluizen viii.  
*Limnodytes* n. g., p. 174, for *L. gerriphagus* n. sp., Meudon, p. 175, aquatic and parasitising egg of *Gerris*, MARCHAL, Ann. Soc. ent. France lxi.  
*Macroteleia grenadensis*, Grenada, ASHMEAD, p. 243, Tr. ent. Soc. London 1900, n. sp.  
*Mantibaria* n. g. *Dryininae*, for *M. anomala* n. sp., Christmas Is., pl. xiv, fig. 5, KIRBY, p. 82, Monogr. Christmas Island.  
*Oethecoctonus* n. n. for *Cacus* Riley, 1893, ASHMEAD, p. 368, Canad. Ent. xxxii.  
*Pantoclis mandibularis*, Canada, HARRINGTON, p. 198, Tr. R. Soc. Canada v, Sect. 4, n. sp.  
*Platygaster minutus* Lind., referred to *Polygnotus*, POSPJELOW, p. 261, Illustr. Zeitschr. Ent. v.  
*Prestwichia aquatica*, in eggs of *Ranatra*, ENOCK, p. xii, P. ent. Soc. London 1900.

- Proctotrypes antillarum*, Grenada, ASHMEAD, p. 240, Tr. ent. Soc. London 1900, n. sp.  
*Sactogaster varipes*, Canada, HARRINGTON, p. 190, Tr. R. Soc. Canada v, Sect. 4, n. sp.  
*Scelio thoracicus, insularis*, St Vincent, ASHMEAD, p. 244, Tr. ent. Soc. London 1900, n. sp.  
*Sierola antipoda*, p. 328, *websteri*, p. 329, Australia, ASHMEAD, P. Linn. Soc. N. S. Wales xxv, n. spp.  
*Telenomus pamphila, hullensis*, Canada, HARRINGTON, p. 182, Tr. R. Soc. Canada v, Sect. 4, n. spp.

## CYNIPIDÆ.

- Acraspis gillettei*, N. America, BASSETT, p. 323, Tr. Amer. ent. Soc. xxvi, n. sp.  
*Aglaotoma nigriceps*, Grenada, ASHMEAD, p. 247, Tr. ent. Soc. London 1900, n. sp.  
*Allotriina*, tabulation of genera and review of species, KIEFFER, pp. 112–115, Wien. ent. Zeit. xix.  
*Allotria australia*, Australia, ASHMEAD, p. 330, P. Linn. Soc. N. S. Wales xxv, n. sp.  
*Amphibolips verna, longicornis*, p. 321, *gainesi*, p. 322, *badius*, p. 323, N. America, BASSETT, Tr. Amer. ent. Soc. xxvi, n. spp.  
*Anacharis zealandica*, New Zealand, *australiensis*, Australia, ASHMEAD, p. 329, P. Linn. Soc. N. S. Wales xxv, n. spp.  
*Andricus curvator* var. n. *lusitanicus*, p. 435, *testaceipes* var. n. *nodifex*, p. 437, KIEFFER, Spec. Hym. vii; *A. operatola* Riley, the agamous form of *A. operator*, BASSETT, p. 315, Tr. Amer. ent. Soc. xxvi.  
*A. (Callirhytis) tuberosa*, *A. pruinosis*, p. 311, *parmula*, *patiens*, p. 312, *perditor*, p. 313, *pulchellus*, *piperoides*, p. 314, *obtusiloba*, *kingi*, p. 316, *incertus*, *ignotus*, p. 317, *exiguus*, p. 318, *crystallinus*, p. 319, *costi*, *ashmeadii*, p. 320, N. America, BASSETT, t. c. n. spp.  
*Antistrophus leavenworthi*, N. America, BASSETT, p. 310, t. c. n. sp.  
*Aulax andrei*, Bitche, KIEFFER, p. 339, Bull. Soc. ent. France 1900; *A. sonchi*, Italy, STEFANI, p. 65, Boll. Nat. xx : n. spp.  
*Callirhytis ceropteroides*, Connecticut, BASSETT, p. 324, Tr. Amer. ent. Soc. xxvi, n. sp.  
*Cynips polycera* var. n. *marchali*, p. 525, var. n. *transversa*, p. 529, *C. conifera* var. n. *longispina*, p. 541, *C. coriaria* var. n. *lusitanica*, p. 554, KIEFFER, Spec. Hym. vii.  
*Diastrophus niger*, p. 324, *minimus*, p. 325, N. America, BASSETT, Tr. Amer. ent. Soc. xxvi, n. spp.  
*Dicerataspis grenadensis*, Grenada, ASHMEAD, p. 246, Tr. ent. Soc. London 1900, n. sp.  
*Diglyphosema jaqueti*, Roumania, KIEFFER, p. 147, Bull. Soc. Bucarest ix, n. sp.  
*Diranchis grenadensis, flavipes*, Grenada, ASHMEAD, p. 248, Tr. ent. Soc. London 1900, n. spp.  
*Dryophanta discus, parvula*, p. 326, *longicornis, pallipes*, p. 327, N. America, BASSETT, Tr. Amer. ent. Soc. xxvi; *D. portera*, New Mexico, COCKERELL, p. 91, Canad. Ent. xxxii, n. spp.  
*Erisphagia nigriceps*, Grenada, ASHMEAD, p. 246, Tr. ent. Soc. London 1900, n. sp.  
*Ganaspis iridipennis*, Grenada, ASHMEAD, p. 249, t. c. n. sp.  
*Holcaspis fasciata*, N. America, BASSETT, p. 328, Tr. Amer. ent. Soc. xxvi, n. sp.  
*Loxaulus spicatus*, Arizona, BASSETT, p. 329, t. c. n. sp.

- Neuroterus umbilicatus*, p. 330, *tectus*, p. 331, *perminimus*, *exiguissimus*, p. 332, *exiguus*, p. 333, *gillettei*, p. 334, *fragilis*, *consimilis*, *dubia*, p. 335, *distortus*, p. 336, N. America, BASSETT, t. c. n. spp.  
*Pentamerocera distinguenda* ♂, ASHMEAD, p. 250, Tr. ent. Soc. London 1900, n. sp.  
*Rhynchacis istratii*, Roumania, KIEFFER, p. 146, Bull. Soc. Bucarest ix, n. sp.  
*Trybliographa australiensis*, Australia, ASHMEAD, p. 330, P. Linn. Soc. N. S. Wales xxv, n. sp.

## SESSILIVENTRES.

- [Cf. ASHMEAD (40), BUYSSON (219), CHAPMAN (239), DYAR (355), JAQUET (660), KINCAID (710), KONOW (756, 757), MACGILLIVRAY (845), MOCSÁRY (914), TURNER (1339), WEBSTER & MALLY (1390).]

## SIRICIDÆ and ORYSSIDÆ.

- Oryssus queenslandensis*, Australia, TURNER, p. 514, P. Linn. Soc. N. S. Wales xxv; *O. (Ophrynopus) sericatus*, New South Wales, MOCSÁRY, p. 126, Termes. Fuzetek xxiii : n. spp.  
*Xiphydria testacea*, New Guinea, MOCSÁRY, p. 127, t. c. n. sp.

## TENTHREDINIDÆ.

- Larvæ reared in confinement in Holland, *Cimber* etc., VAN ROSSUM, Tijdschr. Ent. xliii, Versl. pp. 14-20.  
 For numerous synonymical suggestions, or guesses, see KONOW, Soc. ent. xv, pp. 58 etc.  
*Acordulecera insularis*, St. Vincent, ASHMEAD, p. 298, Tr. ent. Soc. London 1900, n. sp.  
*Allantus rossii* var. *unifasciatus* is *T. scissus* Kl., KONOW, p. 110, Wien. ent. Zeit. xix.  
*A. kiefferi*, Roumania, KONOW, p. 144, Bull. Soc. Bucarest ix; *A. devius*, Siberia, KONOW, p. 124, Ent. Nachr. xxvi; *A. heraclei*, Alaska, KINCAID, p. 364, P. Washington Ac. ii : n. spp.  
*Amauronematus isolatus*, Alaska, KINCAID, p. 358, P. Washington Ac. ii, n. sp.  
*Athalia decorata*, Irkutsk, KONOW, p. 120, Ent. Nachr. xxvi, n. sp.  
*Atomacera ruficollis*, *desmodii*, larvæ, DYAR, pp. 26, 27, J. N. York Ent. Soc. viii.  
*A. desmodii*, Virginia, DYAR, p. 26, t. c. n. sp.  
*Bactroceros sitkensis*, Sitka, KINCAID, p. 344, P. Washington Ac. ii, n. sp.  
*Beldoneu* Cam. is *Macrophya*, *B. rufifrons* is *M. lubens*, KONOW, pp. 109, 110, Wien. ent. Zeit. xix.  
*Blennocampa finitima*, Irkutsk, KONOW, p. 120, Ent. Nachr. xxvi, n. sp.  
*Busarbia* Cam. probably same as *Anapeptamena* Kon., KONOW, p. 108, Wien. ent. Zeit. xix.  
*Camponiscus*, *Leptocercus*, *Pontania*, nomenclature and composition, KONOW, pp. 101-104, t. c.  
*Cimber lutea*, early stages, VAN ROSSUM, Tijdschr. Ent. xliii, Veralag, pp. 58-60.  
*Clarissa divergens*, characters, TURNER, p. 516, P. Linn. Soc. N. S. Wales xxv.  
*C. atrata*, Queensland, id., l. c. n. sp.



- Dolerus elderi*, Alaska, KINCAID, p. 359, P. Washington Ac. ii, n. sp.  
*Emphytus ruficeps* Cam. referred to *Emphytoides*, KONOW, p. 107, Wien. ent. Zeit. xix.  
*E. calliblepharus*, Irkutsk, KONOW, p. 121, Ent. Nachr. xxvi; *E. angustus*, Alaska, KINCAID, p. 360, P. Washington Ac. ii: n. spp.  
*Eriocampa limacina*, peculiar structure used in feeding by larva, CHAPMAN, p. 228, Ent. Mag. xxxvi; *E. punctata* and *major* Cam. referred to *Encarsioneura*, KONOW, p. 109, Wien. ent. Zeit. xix.  
*Erythraspides ashmeadii*, Sitka, KINCAID, p. 345, P. Washington Ac. ii, n. sp.  
*Eurys inconspicua*, coloration, TURNER, p. 517, P. Linn. Soc. N. S. Wales xxv.  
*Eucra insularis*, Alaska, KINCAID, p. 352, P. Washington Ac. ii, n. spp.  
*Fenusa alaskana*, Alaska, KINCAID, p. 345, t. c. n. sp.  
*Harpiphorus tarsatus*, var. n. *intermedius*, p. 30, larvæ of allies, pp. 29-31, DYAR, J. N. York Ent. Soc. viii.  
*Hemidianeura thoracica*, Grenada, ASHMEAD, Tr. ent. Soc. London 1900, n. sp.  
*Hylotoma atripennis* Fab. is *Eriocampa caryæ* Nort., KONOW, p. 106, Wien. ent. Zeit. xix.  
*H. micheli*, Abyssinia, BUYSSON, p. 22, Bull. Mus. Paris 1900, n. sp.  
*Lophyrus pini*, variation in times of appearance, COBELLI, pp. 140-142, Verh. Ges. Wien I.  
*Macrophya foveifrons* Cam. is *verticalis* Kon., KONOW, p. 110, Wien. ent. Zeit. xix.  
*Micronematus*, characters and components, KONOW, p. 105, t. c.  
*Monophadnus insularis*, Alaska, KINCAID, p. 346, P. Washington Ac. ii, n. sp.  
*Nematus septentrionalis*, larval habits, BUYSSON, p. 343, Bull. Soc. ent. France 1900.  
*Nycteriidium* to be used for *Lophyrus* Latr., COCKERELL, p. 40, Entomologist xxxiii.  
*Pachynematus oronus*, p. 347, *orarius*, *gotarus*, p. 348, Alaska, KINCAID, P. Washington Ac. ii, n. spp.  
*Paraselandria rufigastera*, Alaska, KINCAID, p. 346, t. c. n. sp.  
*Pontania tundra*, p. 352, *popofiana*, p. 353, *unga*, *ora*, *peninsularis*, p. 354, *islandica*, *glinka*, p. 355, *kukakiana*, p. 356, Alaska, KINCAID, t. c. n. spp.  
*Priophorus irregularis*, New Hampshire, DYAR, p. 28, J. N. York Ent. Soc. viii, n. sp.  
*Pristiphora*, discussed, KONOW, pp. 104, 105, Wien. Ent. Zeit. xix.  
*P. ortinga*, p. 349, *anaka*, *circularis*, *bucoda*, p. 350, *tana*, p. 351, Alaska, KINCAID, P. Washington Ac. ii, n. spp.  
*Pteronous ostrya*, larva, DYAR, p. 29, J. N. York Ent. Soc. viii.  
*P. shumagensis*, *zebratus*, p. 357, *ricularis*, p. 358, Alaska, KINCAID, P. Washington Ac. ii, n. spp.  
*Schizocerus zabriski*, habits, early stages, WEBSTER & MALLY (1390); larva, DYAR, p. 31, J. N. York Ent. Soc. viii; sudden disappearance, WEBSTER, p. 318, t. c.  
*Selandria pilicornis* Cam. etc. referred to *Stromboceros*, KONOW, p. 107, Wien. ent. Zeit. xix.  
*S. catellata*, Irkutsk, KONOW, p. 121, Ent. Nachr. xxvi, n. sp.  
*Siobla ruficollis* Cam. is *Taxonus incertus* Cam., KONOW, p. 108, Wien. ent. Zeit. xix.  
*Strongylogaster desbrochersi*, metamorphoses, SEURAT, pp. 182-185, Bull. Mus. Paris 1900.  
*Taxonus creperus*, p. 122, *delumbis*, p. 123, Irkutsk, KONOW, Ent. Nachr. xxvi, n. spp.

*Tenthredo fuscicornis* Esch. = (*scita* Er.), *bicarinata* Cam. and *tuberculifera* Kon. are one, *carinifrons* Cam. and *cretata* Kon. are one, *violaceipennis* Cam. and *ferruginosa* Kon. are one, also probably *annularis* Cam. and *zebra* Kon., KONOW, pp. 110, 111, Wien. ent. Zeit. xix.

*T. eburata*, Irkutsk, KONOW, p. 125, Ent. Nachr. xxvi; *T. harrimani*, *dissimulans*, p. 363, *bivittata*, p. 364, Alaska, KINCAID, P. Washington Ac. ii; *T. fernaldii*, p. 177, *causatus*, *rubripes*, p. 178, *junghannsii*, *slossonii*, *nicatus*, p. 179, *olivatus*, *lunatus*, p. 180, *rubrisommus*, *nigricoxis*, p. 181, *alphius*, p. 182, *atracoatus*, *aldrichii*, p. 183, *zigrifascia*, *savagei*, p. 184, N. America, MACGILLIVRAY, Canad. Ent. xxxiii : n. spp.

*Tenthredopsis picticeps* Cam. is probably *campestris* L., KONOW, p. 109, Wien. Ent. Zeit. xix; *T. languida* ♂, KONOW, p. 123, Ent. Nachr. xxvi.

*Tomostethus veles*, Irkutsk, KONOW, p. 119, Ent. Nachr. xxvi, n. sp.



(c.) *LEPIDOPTERA.*

- The morphology and classification of *Lepidoptera*, PETERSEN (993).  
 Amended table of the families of *Lepidoptera*, SNELLEN (1038).  
 Criticism of Grote's views as to classification and nomenclature of *Lepidoptera*, JORDAN (668).  
 The male genitalia of several forms, STITZ (1285).  
 List of varieties of European *Macrolepidoptera*, AGASSIZ (12).  
 Flexus, dorsum and limbus, orismological terms applied to wings, WAL-SINGHAM, p. 1, Bull. Liverp. Mus. iii.  
 Metamorphosis of *Lepidoptera*, TUTT (1343).  
 Development of the wings, MERCER (896).  
 Organogeny of nervures, GROTE (532).—Development of nervuration, CHAPMAN (237).  
 The antenna: organogenetic study, CHAPMAN (242).  
 Regeneration of legs, CHAPMAN (238).  
 Coloured rays, and coloration of pupa, KATHARINER (682).  
 Evolution of colour, PIEPERS (1037).

*RHOPALOCERA.*

- [Cf. AITKEN (14), AURIVILLIUS (45, 46), BARNES (70, 71), BORDAGE (138), BUTLER (207–211), CROWLEY (297), DANNATT (311), DIXEY (983), ELWES (368), FAWCETT (406), FELTHAM (413), FISCHER (420–422), FRUHSTORFER (471, 472), FUCHS (473), GALVAGNI (484), GODMAN (511), GROSE-SMITH (527–531), GROTE (533–536), GRUM-GRSHIMAILO (541), HERZ (584), HOLLAND (595, 596), HORVÁTH & MOCSÁRY (608), HÜBNER (620), KARSCH (675, 679, 680), KATHARINER (682), KLIN-KHARDT (736), KÖHLER (743), LATHY (798), LUCAS (832), LYELL (841), MABILLE (842–844), NICÉVILLE (942), OBERTHUR (950, 951, 953), PAGENSTECHER (974, 975), PETERSEN (993), QUAIL (1063), RIBBE (1114), RIFFARTH (1118), RÖBER (1122), ROTHSCHILD (1136), ROTHSCHILD & JORDAN (1137), SHARPE (1213, 1214), SKINNER (1225), SLEVOGT (1230), SNELLEN (1248, 1249), SNYDER (1253), STAUDINGER (1269, 1271), STEFANELLI (1273), STRECKER (1289), TETENS (1312), WATERHOUSE (1387), WEEKS (1392).]
- Classification and phylogeny of *Rhopalocera* and nomenclature of nervures, GROTE (532).  
 Phylogeny, GROTE (534).—*Papilionides* and *Hesperiades*, distinctions, GROTE, p. 359, Canad. Ent. xxxii.  
 Division of *Rhopalocera* into 2 or 3 chief groups, GROTE (535), QUAIL (1063).—Grote's views as to *Papilionides* and *Hesperiades*, TUTT, p. 203, Ent. Rec. xli.  
 Discussion of distribution of *Rhopalocera* in the Malay Archipelago, and notes on the fauna of each island, PAGENSTECHER (974).  
 Account of the *Rhopalocera* of the Bismarck Archipelago, PAGENSTECHER (975).  
 The *Rhopalocera* of Bismarck Archipelago; remarks on the paper by Pagenstecher, recorded last year, SNELLEN (1248).

- The *Rhopalocera* of Bazilan Is. (Philippines), with numerous varieties not specially recorded below, FRUHSTORFER (471).  
*Rhopalocera* of Tuscany, with remarks on varieties etc., STEFANELLI (1273).  
 The *Rhopalocera* of Bulgaria, with notes on varieties, ELWES, Tr. ent. Soc. London 1900.  
 Structure and development of male armature, KLINKHARDT (736).  
 Dwarfing of *Rhopalocera* due to parasites?, RUSSELL, p. 129, Entomologist xxxiii.

## PAPILIONIDÆ.

- Ornithoptera cræsus*, variation, FRUHSTORFER, p. 197, Illustr. Zeitschr. Ent. v.  
*O. titan*, New Guinea, GROSE-SMITH, p. 388, Ann. Nat. Hist. vi, n. sp.  
*Papilio machaon* varr., GAUCKLER, p. 103, Deutsche ent. Zeitschr. Lep. xiii; *P. machaon* varr., VAN ROSSUM and others, Tijdschr. Ent. xliii, pp. 47, 48 Verslag; *P. machaon*, notes on in the Baltic region, SLEVOGT, Horæ Soc. ent. Ross. xxxiv, pp. 525, 526; *P. machaon*, coloration of pupa, MERRIFIELD, p. x, P. ent. Soc. London 1900; *P. machaon* and *podalirius* variation in Italy, STEFANELLI, pp. 165-169, Bull. Soc. ent. Ital. xxxii; *P. neyra* ♂, GROSE-SMITH, Rhop. exot. iii, Pap. xx, figg. 3, 4, p. 47; *P. electryon* ♀, BARRETT, p. 428, Ent. News Philad. xi; *P. browni* ♂, pl. i, fig. 4, p. 30, *segonax* ♂, pl. ii, fig. 1, p. 20, *cilix* ♂, fig. 7, p. 20, PAGENSTECHER, Zoologica xvii; *P. nireus* var. *abyssinica*, CANNAVIELLO, p. 292, Bull. Soc. ent. Ital. xxxii; *P. bridgei* var. n. *fischeri*, *P. cilix* var. n. *alboventris*, p. 407, *P. impar* var. n. *shortlandica*, p. 408, RIBBE, Deutsche ent. Zeitschr. Lep. xii; *P. gyas* var. n. *porus*, *P. troilus* var. n. *radiatus*, STRECKER, Suppl. iii; *P. memnon* allies in Malay Arch., PIEPER, Tijdschr. Ent. xliii, Verslag, pp. 48-50; *P. asterias calverleyi*, nature of the variation, SPENGEL, p. 205, Zool. Jahrb. Syst. xiii; *P. polices* larva, pupa, pl. xvi, figg. 23-31, *brasidas* larva, pupa, figg. 32-36, *morania* larva, pupa, figg. 37-40, *demodocus* larva, pupa, figg. 46-51, *nireus* larva, figg. 41-45, FAWCETT, pp. 298-302, Tr. Zool. Soc. London xv; *P. demoleus*, inutility of variously colored pupæ, BORDAGE (138).  
*P. andocides*, Congo, GROSE-SMITH, Rhop. exot. iii, Pap. Papilio xx, figg. 1, 2, p. 47; *P. thurau*, E. Africa, KARSCH, p. 126, Ent. Nachr. xvi; *P. fulleborni*, E. Africa, KARSCH, p. 353, t. c.; *P. sticheli*, Malacca, TETENS, p. 296, t. c. n. sp. or subsp.; *P. panopæa*, pl. EE, fig. 20, *parus*, fig. 21, W. China, NICÉVILLE, p. 172, J. Bombay Soc. xiii; *P. hamela*, Hainan, CROWLEY, p. 509, pl. xxxv, fig. 3, P. Zool. Soc. London 1900; *P. dizoni*, Celebes, GROSE-SMITH, p. 210, Ann. Nat. Hist. vi; *P. bonhotei*, Bahamas, SHARPE, p. 210, pl. xix, P. Zool. Soc. London 1900 : n spp.  
*Parnassius apollo* varr. n. *inversa*, *ciffolensis*, AUSTAUT, p. 142, Naturaliste xxii; *P. apollo* subsp. n. *bartholomæus*, STICHEL, pp. 36-38, SB., Berlin. ent. Zeitschr. xlv; *P. apollo*, oviposition of, CHAPMAN, p. 282, Entomologist xxxiii; *P. mnemosyne*, sex organs, CHOLODKOVSKY (249).  
*Schoenbergia meridionalis*, ♂, ♀, GROSE-SMITH, Rhop. exot. Papil. Ornithoptera iii, figg. 1, 2.  
*Trigonoptera* a valid genus, HORVÁTH & MOCSÁRY, p. 160, Termes. Fuzetek xxiii.  
*Troides elisabethæ-reginæ*, p. 161, ♂ pl. i, ♀ pl. ii, *T. goliath*, ♀ pl. iii, *T. oblongomaculatus* var. n. *biroi*, p. 165, HORVÁTH & MOCSÁRY, t. c.; *T. oblongomaculatus bouruensis* variation, HOLLAND, p. 82, Nov. Zool. vii.

## PIERIDÆ.

- Phylogeny of *Pieridæ*, descriptions of the genera, mimicry, GROTE, P. Amer. Phil. Soc. xxxix, pp. 1-68, pls. i-iv.
- Anthocharis gemutia*, habits and larva, SMYTH, pp. 465-468, Ent. News Philad. xi; *A. belemia*, protective coloration, CHAPMAN, p. 69, Entomologist xxxiii.
- A. orientalis*, E. Siberia, AUSTAUT, p. 48, Naturaliste xxii, *ibelia* var. vel n. sp.
- Aporia crategi*, coloration of pupa, MERRIFIELD, p. ix, P. ent. Soc. London 1900; *A. crategi*, colour of pupal and imaginal wings, CHAPMAN, pp. xxiii, xxiv, t. c.; *A. crategi*, protection and edibility of pupa, MERRIFIELD (898).
- Azalaia* n. g. type *Leucophasia gigantea* Leech, GROTE, p. 13, P. Amer. Phil. Soc. xxxix.
- Belenois peeli*, Somaliland, DIXEY, p. 15, pl. i, figg. 5, 6, P. Zool. Soc. London 1900, n. sp.
- Callidryas agarithe*, life-history, DYAR, p. 618, Ent. News Philad. xi.
- Colias edusa* var. *failla*, STEFANELLI, p. 187, Bull. Soc. ent. Ital. xxxiii; *C. edusa*, swarm of males in Ireland, CRUTTWELL, p. i, Ent. Mag. xxxvi; FLEMING, t. c. p. 28; *C. hecla* var. n. *orientalis*, GRUM-GRSHIMAILO, p. 458, Annuaire Mus. St. Petersb. iv; *C. philodice* and *eurytheme*, genitalia, SKINNER & SMITH, p. 449, Ent. News Philad. xi; *C. hyperborea*, Lena Valley, p. 455, *aquilonaris*, Olenek Riv. Valley, p. 457, GRUM-GRSHIMAILO, Annuaire Mus. St. Petersb. iv : n. spp.
- Cumizza* n. g. type *C. hirtlanda*, GROTE, p. 35, P. Amer. Phil. Soc. xxxix.
- Delias rothschildi*, Buru, HOLLAND, p. 81, Nov. Zool. vii; *D. xelianthe*, p. 86, *tere*, *zarate*, p. 87, New Guinea, GROSE-SMITH, t. c. : n. spp.
- Eurema xanthomelæna* ♂, pl. ii, fig. 5, p. 42, PAGENSTECHER, Zoologica xxvii.
- Hipocritia lageloides*, Hainan, CROWLEY, p. 509, pl. xxxiv, fig. 2, P. Zool. Soc. London 1900, n. sp.
- Ixias reinwardti* var. n. *extincta*, RÖBER, p. 200, Ent. Nachr. xxvi.
- Metaporia paracæa*, W. China, NICEVILLE, p. 171, pl. ee, fig. 19, J. Bombay Soc. xiii, n. sp.
- Mylothris asphodelus*, figg. 1-3, *clarissa*, figg. 4, 5, *ruppelli*, figg. 6, 7, *flaviana*, figg. 8, 9, Pap. Pier. Mylothris i, *primulina*, figg. 1, 2, *narcissus*, figg. 3-5, *swaynei*, figg. 8, 9, Mylothris ii, GROSE-SMITH, Rhop. exot. iii, Pap. Pier.
- M. flavia*, Cameroons, GROSE-SMITH, t. c. p. 6, n. sp.
- Neophasia terlooii* var. n. *princetonia*, POLING, p. 358, Canad. Ent. xxxii; *N. epyaxa*, Arizona, STRECKER [cf. Ent. News Philad. xi, p. 534], n. sp. but stated t. c. p. 535 to be *N. terlooii* Behr.
- Phrissura phæbe*, E. Africa, BUTLER, p. 936, pl. lviii, figg. 6, 7, P. Zool. Soc. London 1900, n. sp.
- Piccarda* n. g. type *Pieris eucharis* Drury, GROTE, p. 32, P. Amer. Phil. Soc. xxxix.
- Pieris teutonia* ♀, pl. ii, fig. 6, p. 37, PAGENSTECHER, Zoologica xxvii; *P. rapæ* var. n., *leucotera*, p. 175, *rossii*, p. 178, *erganoides*, p. 179, STEFANELLI, Bull. Soc. ent. Ital. xxxii; *P. creona* var. *cæca*, CANNAVIELLO, p. 293, t. c.; *P. severina* larva, pupa, pl. xlvii, figg. 19, 20, *hellica* larva, pupa, figg. 21, 22, p. 297, FAWCETT, Tr. Zool. Soc. London xv; *P.*: seasonal dimorphism in Rhineland, FRINGS, pp. 163, 172, Soc. ent. xiv.
- P. voeltzkovi*, Madagascar, KARSCH, p. 369, Ent. Nachr. xxvi; *P. (Herpænia) callianira*, Madagascar, MABILLE, p. 373, Bull. Mus. Paris

- 1899; *P. pagenstecheri*, Sumba, RÖBER, p. 199, Ent. Nachr. xvi : n. spp.  
*Synchlōs lacinia*, larval food-plant, COCKERELL, p. 503, Ent. News Philad. xi.  
*Teracolus*, monograph continued, numerous species figured, SHARPE (1213); *T. eupompe* var., DIXEY, p. 14, P. Zool. Soc. London 1900; *T. mutans*, seasonal forms, BUTLER, p. 62, Ann. Nat. Hist. v.  
*T. difficilis* (pt. of *T. phlegyas*), p. 58, pl. 20, fig. 1, SHARPE, Mon. *Teracolus*, n. sp.

## DANAIDÆ (incl. NEOTROPIDÆ).

- Anosia archippus*, migration discussed, MOFFAT, pp. 44–51, Rep. ent. Soc. Ontario 1900.  
*Danaüs tuckenthalii*, description and figure, NICÉVILLE, p. 159, pl. cc, fig. 2, J. Bombay Soc. xiii; *D. plexippus* var. n. *pulchra*, STRECKER, p. 21, Suppl. iii; *D. chrysippus* and *dorippus*, nomenclature, SUFFERT, Berlin. ent. Zeitschr. xlv, SB. p. 6; *D. dorippus* var. n. *transiens*, SUFFERT, p. 115, t. c.; *D. chrysippus*, note on African larva of, FAWCETT, p. 293, Tr. Zool. Soc. London xv; *D. chrysippus*, coloration of pupa, BORDAGE, p. 236, Bull. Soc. ent. France 1900; *D. limniace*, *septentrionis*, *melissa*, ♂ genitalia, STICHEL, Berlin. ent. Zeitschr. xlv, SB. pp. 30–32.  
*Dircenna barrettii*, Peru, DANNATT, p. 299, Entomologist xxxiii, n. sp.  
*Euplaea clorinde*, description and figure, p. 161, pl. cc, fig. 3, NICÉVILLE, J. Bombay Soc. xiii; *E. doretta*, p. 51, pl. i, fig. 1, *malaguna*, fig. 2, *majuma*, fig. 3, PAGENSTECHER, Zoologica xxvii; *E. core*, migration, AITKEN, p. 540, J. Bombay Soc. xiii.  
*Hestia (Nectarina) sula*, Sula-Mangoli, NICÉVILLE, p. 157, t. c. n. sp.  
*Ideopsis isa*, description and figure, p. 158, pl. cc, fig. 1, NICÉVILLE, t. c.  
*Radena buruensis*, Buru, HOLLAND, p. 56, Nov. Zool. vii, n. sp.  
*Vadebra dohertyi*, Buru, HOLLAND, p. 57, t. c. n. sp.

## ACRÆIDÆ and HELICONIDÆ.

- Acræa*; larva and pupa figured, *A. petraea*, pl. xlvi, figg. 1–3, *encedon*, figg. 4–6, *rahira*, figg. 7–9, *buxtoni*, figg. 10–12, pp. 294, 295, FAWCETT, Tr. Zool. Soc. London xv; *A. mirabilis*, pl. 1, fig. 4, p. 11, DIXEY, P. Zool. Soc. London 1900.  
*A. quirinalis*, *subserena*, p. 544, *pomponia*, *pelagus*, p. 545, *toruna*, p. 546, Africa, GROSE-SMITH, Nov. Zool. vii, n. spp.  
*Heliconius*; rearrangement of, with many varr. n. and the following n. spp.; *H. paraensis*, p. 197, *batesi*, p. 207, S. America, RIFFARTH, Berlin. ent. Zeitschr. xlv; *H. tithoreides*, Peru, STAUDINGER, p. 404, pl. vii, fig. 13, Deutsche ent. Zeitschr. Lep. xii, n. form or n. sp.  
*Planema alicia*, p. 546, *paragea*, p. 547, Uganda, GROSE-SMITH, Nov. Zool. vii, n. spp.

## NYMPHALIDÆ.

- Acidalia hyperbicus*, pl. 373, fig. 1, *castetzi*, fig. 2, pp. 230–236, MOORE, Lep. ind. iv.  
*A. taprobana*, Ceylon, id. p. 237, t. c. n. sp.  
*Agrias sardanapalus* var. n. *kades*, LATHY, p. 29, Ent. Mag. xxxvi.  
*Amnosia*; key to species, LATHY, p. 196, t. c.

- Apatura bolina*, figures, larva and pupa, pls. 329-331, pp. 137-144, *missippus*, pl. 332, pp. 144-150, MOORE, Lep. ind. iv.
- Argynnis*: nervation of *Argynnis* and allies, GROTE, p. 7, Canad. Ent. xxxii; notes on *N. American*, with list, SYNDER, p. 38, Mem. Soc. Chicago i; *A. jainadeva*, pl. 374, fig. 1, *vitatha*, fig. 2, MOORE, pp. 238, 239, Lep. ind. iv; *A. paphia* ♀ var., pl. iii, fig. 3, FROHAWKE, Entomologist xxxiii; *A. aglaia* varr., STICHEL, pp. 132-137, Berlin. ent. Zeitschr. xlv; *A. selene* var. n. *flavopunctata*, STRAND, Arch. Naturv. Christian. xxii, No. 5, p. 20 and p. 226, Ent. Nachr. xxvi; *A. selene* var., p. 242, pl. xiv, figg. 8, 9; *A. aglaia* varr., p. 245, figg. 10, 11, TER HAAR, Tijdschr. Ent. xliii; *A. pales* varr., GALVAGNI, Verh. Ges. Wien I, pp. 565-567, cuts; *A. nitocris* var. n. *nigrocerulea*, WILMATTE & COCKERELL, p. 622, Ent. News Philad. xi; *A. nitocris* var. n. *caerulescens*, HOLLAND, p. 332, t. c.; *A. nitocris caerulescens*, note, SKINNER, p. 483, t. c.; *A. caerulescens* a valid species, SMITH, p. 449, t. c.
- Atella phalantha*, pl. 360, p. 197, MOORE, Lep. ind. iv.
- A. alcippoides*, pl. 361, fig. 2, p. 199, *fraterna*, fig. 2, p. 201, India, MOORE, t. c. n. spp.
- Bassarona affinis*, Siam, LATHY, p. 214, Entomologist xxxiii, n. sp.
- Boloria* n. g. for part of *Argynnis*, p. 244, *B. sipora*, pl. 375, *generator*, pl. 376, fig. 1, *hegemone*, fig. 2, *jerdoni*, fig. 4, *gemmata*, pl. 377, fig. 1, *altissima*, fig. 2, *mackinnonii*, fig. 3, *clara*, pl. 378, MOORE, Lep. ind. iv.
- B. chitralensis*, Kashmir, id. t. c. p. 249, pl. 376, fig. 3, n. sp.
- Brenthis pales* var. n. *alaskensis*, HOLLAND, p. 383, Ent. News Philad. xi.
- B. youngi*, Alaska, id. l. c., n. sp.
- Cethosia*; characters of the species with varr. n., FRUHSTORFER, Ent. Zeit. Stettin li, pp. 364-381; *C. cyane*, pl. 177, *nicobarica*, pl. 349, *mahratta* with larva and pupa, pl. 350, *nietneri* with larva and pupa, pl. 351, *biblis*, pls. 352, 353, pp. 176-187, MOORE, Lep. ind. iv.
- C. buruana*, Buru, HOLLAND, p. 63, Nov. Zool. vii, n. sp.
- Charaxes*: monograph, 103 species; numerous new subsp. described, ROTHSCHILD & JORDAN, t. c.; *C. ansorgei* ♀, BUTLER, p. 915, P. Zool. Soc. London 1900; *C. candiope* larva, pupa, p. 296, pl. xlv, figg. 16, 17, FAWCETT, Tr. Zool. Soc. London 1900.
- C. penricei*, Angola, ROTHSCHILD, p. 460, Nov. Zool. vii; *C. andrewesi*, Christmas Is., BUTLER, p. 61, pl. ix, fig. 8, Monogr. Christmas Island: n. spp.
- Chlorippe*: problematic females, STICHEL, Berlin. ent. Zeitschr. xlv, p. 40; *C. racuna* varr., pp. 146-148, gynandromorph, pl. ii, fig. 1, STICHEL, t. c.
- Cirrochroa aoris*, pl. 364, *abnormis*, pl. 365, fig. 1, *olivacea*, fig. 2, *mithila*, pl. 366, *anjira*, pl. 367, fig. 1, *surya*, fig. 2, *thais*, pl. 368, *lanka*, pl. 369, *nicobarica*, pl. 370, pp. 211-223, MOORE, Lep. ind. iv; *C. aoris*, gynandromorph, pl. dd, figg. 12, 13, p. 168, NICEVILLE, J. Bombay Soc. xiii.
- Cynthia erota*, pls. 354, 355, *saloma* with larva and pupa, pls. 356, 357, *asela* with larva and pupa, pl. 358, pp. 187-194, MOORE, Lep. ind. iv; *C. arsinoë*, list of varr., FRUHSTORFER, Berlin. ent. Zeitschr. xlv, pp. 27, 28.
- Cupha erymanthis*, pl. 362, fig. 1, *maja* with larva and pupa, fig. 2, *placida*, pl. 363, fig. 1, MOORE, Lep. ind. iv.
- C. andamanica*, South Andamans, id. p. 208, pl. 363, fig. 2, t. c. n. sp.
- Cymothoe aurivillii*, figured, pl. v, figg. 5 and 8, Deutsche ent. Zeitschr. Lep. xii.
- Cyrestis aza*, Siam, STRECKER, p. 24, Suppl. iii, n. sp.
- Cystineura floridana*, Florida, id. l. c. n. sp.

- Doleschallia indica*, pl. 336, larva and pupa, fig. 2, *andamanica* n. n. for *polibete* Nicév. nec Cr., pl. 335, pp. 154-158, MOORE, Lep. ind. iv.
- D. borneensis*, Borneo, id. p. 158, t. c. n. sp.
- Dryas kamala*, pl. 371, fig. 1, *rudra*, fig. 2, *childreni*, pl. 372, fig. 1, *sakontala*, fig. 2, pp. 223-230, MOORE, t. c.
- Ducapa* n. n. for *Paduca* Moore, p. 209, *D. fasciata*, pl. 363, fig. 3, *flavobrunnea*, fig. 4, MOORE, t. c.
- Eugonia j-album*, larva, variation of pupa, DURAND, p. 87, Psyche ix.
- Eulepis eudamippus whiteheadi*, Hainan, CROWLEY, p. 506, P. Zool. Soc. London 1900, n. sp.
- Euralia (Diadema) grandidieri*, Madagascar, MABILLE, p. 374, Bull. Mus. Paris 1899, n. sp.
- Euthalia theili* ♀, pl. i, fig. 5, p. 89, PAGENSTECHER, Zoologica xxvii.
- Euripus halitheres* varr., FRUHSTORFER, Berlin. ent. Zeitschr. xlv, SB. pp. 22, 23.
- Euvassena antiopa*, larva in N. America, WEED (1391).
- Grapta j-album*, larva, FLETCHER, p. 273, Canad. Ent. xxxii.
- Hestina namoides*, W. China, NICÉVILLE, p. 166, pl. DD, fig. 10, J. Bombay Soc. xiii, n. sp.
- Hypolimnas nerina* var. *listeri*, variation, BUTLER, Monogr. Christmas Island p. 62; *H. lasinassa*, characters, HOLLAND, p. 65, Nov. Zool. vii; *H. misippus* at sea, POULTON, p. 80, Ent. Rec. xii.
- Isoria sinha*, pl. 359, fig. 2, p. 202, MOORE, Lep. ind. iv.
- Junonia cebrene*, pupa, p. 295, pl. xlv, fig. 13, *clelia*, larva and pupa, fig. 14, FAWCETT, Tr. Zool. Soc. London xv; *J. alleni* n. n. for *ocyale* Hb., *hubneri* n. n. for *Hamadryas decora evarete* ♂ Hübn., *oriana* n. n. for *evarete* ♀ Hübn., KIRBY, Hubner n. ed. p. 24; *J. enons hierta* to be called *lintingensis* Osbeck, Fox, p. 718, Science xii.
- Kirontsia whiteheadi*, Hainan, CROWLEY, p. 506, pl. xxxv, fig. 4, P. Zool. Soc. London 1900, n. sp.
- Kallima hugelii*, pl. 337, *buckleyi*, pls. 338, 339, *inachus*, pls. 340, 341, *limborgii*, pl. 342, *philarchus*, pls. 343, 344, *horefeldii* with larva and pupa, pls. 345, 346, *knypetti*, pl. 347, fig. 1, *albofasciata*, fig. 2, pp. 162-175, MOORE, Lep. ind. iv.
- Melitea didyma* var. *uranica*, *M. asteroida* var. *maculata*, STAUDINGER, p. 335, Deutsche ent. Zeitschr. Lep. xii; *M. didyma* var. n. *polaris*, GRUM-GRSHIMAILO, p. 459, Annuaire Mus. St. Petersburg. iv; *M. chalcodon* varr. n. *fusimacula*, *mariana*, BARNES, p. 42, Canad. Ent. xxxii; *M. didyma* varr., STICHEL, pp. 128-131, Berlin. ent. Zeitschr. xlv; *M. didyma*, *parthenie* varr., OBERTHUR, p. 276, Bull. Soc. ent. France 1900, pl. i; *M. helvia* redescribed, HOLLAND, p. 385, Ent. News Philad. xi.
- M. approximata*, Texas, STRECKER, p. 23, Suppl. iii; *M. senrabi*, Texas, BARNES, p. 43, Canad. Ent. xxxii : n. spp.
- Myscelia hypatia*, Amazons, STRECKER, p. 24, Suppl. iii, n. sp.
- Neptis pruslini* and *nemeus*, synonymy, RIBBE, p. 408, Deutsche ent. Zeitschr. Lep. xii; *N. venilia novohannoverana*, PAGENSTECHER, p. 82, Zoologica xxvii; *N. seeldrayersi* ♀, AURIVILLIUS, p. 1042, Ofv. Ak. Forh. lvii.
- N. heliopolis* ♂, figg. 1, 2, ♀, fig. 3, GROSE-SMITH, Rhop. exot. Nymph. Neptis iv; *N. mortifacies*, figg. 1, 2, *cyanifera*, figg. 3, 4, *astræa*, figg. 5, 6, id. t. c. Neptis v.
- N. polion*, Bouru, id. t. c. Neptis iv, p. 14, figg. 4-6; *N. neriphoides*, Buru, HOLLAND, p. 66, Nov. Zool. vii; *N. nerio*, Buru, NICÉVILLE, p. 167, pl. DD, fig. 11, J. Bombay Soc. xiii : n. spp.
- Penthema mimetica*, Siam, LATHY, p. 213, Entomologist xxxiii, n. sp.
- P. lisarda*, pl. 333, *dartisa*, p. 334, *binghami*, pl. 335, pp. 150-154, MOORE, Lep. ind. iv.



- Phædyma ampliata* ♂, pl. i, fig. 6, p. 86, PAGENSTECHER, Zoologica xxvii.  
*Phyciodes ithra* [said to be new name] for *Acca hera* Hübn. nec Cr., KIRBY in Hubner new ed. p. 18.  
*Precis simia* var., BUTLER, p. 59, Ann. Nat. Hist. v; *P. sesamus*, pl. lviii, fig. 1, p. 916, BUTLER, P. Zool. Soc. London 1900.  
*Pseudonica* n. n. for *Nica* Hb., KIRBY, p. 28, Hubner new ed.  
*Pyrameis atalanta* var., with *italica* subsp. n., STICHEL, pp. 124-128, Berlin. ent. Zeitschr. xlv; *P. cardui* var. n. *minor*, CANNAVIELLO, p. 19, Miscell. ent. viii; *P. huntera* var. n. *fulvia*, DODGE, p. 92, Canad. Ent. xxxii.  
*Rathora* n. g. for the *A. lathonia* group of *Argynnis*, MOORE, p. 241, *R. issaca*, pl. 375, fig. 1, Lep. ind. iv.  
*Terinos maddalena* ♀, pl. ii, fig. 4, p. 66, PAGENSTECHER, Zoologica xxvii; *T. clariassa*, pl. 359, fig. 1, p. 194, MOORE, Lep. ind. iv.  
*T. falcipennis*, Siam, LATHY, p. 213, Entomologist xxxiii, n. sp.  
*Vanessa urtica*, *atalanta* var., pl. iii, FROHAWK, p. 101, t. c.; *V. cardui* var., GOUIN, p. 93, pl. iv, fig., Act. Soc. Bordeaux v; *V.*: temperature experiments, FISCHER (420, 421); *V. gonerilla*, life-history, QUAIL, p. 153, Ent. Mag. xxxvi; *V. antiopa*, ovipositing, WEEKS (1392).

## MORPHIDÆ.

- Amathusia kuhni*, Celebes, p. 201, *staudingeri*, Borneo, p. 202, RÖBER, Ent. Nachr. xxvi, n. spp.  
*Clerome sulana*, description and figure, p. 165, pl. dd, fig. 9, NICÉVILLE, J. Bombay Soc. xiii.  
*Nandoges hainana*, Hainan, CROWLEY, p. 505, P. Zool. Soc. London 1900, n. sp.  
*Stichophthalma camadeva* var. n. *nicevillei*, RÖBER, p. 203, Ent. Nachr. xxvi; *S. suffusa* var., SUFFERT, Berlin. ent. Zeitschr. xlv, SB., p. 2.

## SATYRIDÆ.

- Acropternis chionides*, Sula-Mangoli, NICÉVILLE, p. 163, pl. dd, fig. 7, J. Bombay Soc. xiii, n. sp.  
*Cænonympha*: the N. American, SKINNER, pp. 299-309, pl. vii, Tr. Amer. ent. Soc. xxvi; *C. tiphon* var. n. *rhodopensis*, ELWES, p. 205, Tr. ent. Soc. London 1900; *C. kodiak* var. n. *yukonensis*, HOLLAND, p. 386, Ent. News Philad. xi; *C. iphis*, egg and oviposition, GILLMER, p. 351, Illustr. Zeitschr. Ent. v, of *C. tiphon* id., t. c., p. 384.  
*Epinephele janira* var. *fulvocincta*, FUCHS, p. 37, Jahrb. Nassau Ver. liii; *E. haberhaueri* var. n. *rubriceps*, *E. hilaris* var. n. *bori*, HERZ, p. 446, Annuaire Mus. St. Petersb. v.  
*Erebia epiphron* var. n. *orientalis*, p. 199, *oeme* var. p. 200, *melas* var. p. 201, *tyndarus* var. *gorgone* var. n. *rhodopensis*, p. 202, ELWES, Tr. ent. Soc. London 1900; *E. fasciata* var. n. *nemo*, GRUM-GRSHIMAILO, p. 460, Annuaire Mus. St. Petersb. iv; *E. tyndarus* var., GALVAGNI, p. 568, Verh. Ges. Wien I; *E. sofia* var. n. *alaskensis*, p. 387, HOLLAND, Ent. News Philad. xi; *E. glacialis*, note on, ROWLAND-BROWN, p. xvi, P. ent. Soc. London 1900; *E. cassiope* etc., larvæ, WULLSCHLEGEL, pp. 287, 288, Mt. Schweiz. ent. Ges. x.  
*E. youngi*, Alaska, HOLLAND, p. 388, Ent. News Philad. xi, n. sp.  
*Lethe sura*, gynandromorph, NICÉVILLE, p. 163, pl. cc, figg. 5, 6, J. Bombay Soc. xiii.

- Melanitis leda bouruana* subsp. n., HOLLAND, p. 61, Nov. Zool. vii.  
*Mycalis lamani*, Congo, AURIVILLIUS, p. 1040, Ofv. Ak. Forh. lvii;  
*M. valeria*, New Guinea, GROSE-SMITH, p. 88, Nov. Zool. vii : n. spp.  
*Oeneis jutta* var. n. *alaskensis*, HOLLAND, p. 389, Ent. News Philad. xi;  
*O. elsa* ♀, AUSTAUT, *Oe. verdanda* var. *vanda*, p. 48, Naturaliste xxii.  
*Oxeoschistus cothonides*, fig. 3, GROSE-SMITH, Rhop. exot. *Oxeoschistus* i.  
*O. phalsi*, *chypota*, figg. 4, 5, *erebus*, fig. 6, S. America, GROSE-SMITH,  
 Rhop. exot. Satyr. Pedaliodes iv and *Oxeoschistus* i, n. spp.  
*Pararge mæra* var., FUCHS, p. 35, Jahrb. Nassau. Ver. liii.  
*Pedaliodes palades* figg. 8, 9, *P. palæopolis* synonymy, GROSE-SMITH, Rhop.  
 exot. iii, Pedaliodes v, p. 20.  
*P. plotinella*, p. 15, figg. 3, 4, *hopfferi*, figg. 5, 6, *phazania*, p. 16, fig. 7,  
*polemon*, p. 16, fig. 8, S. America, GROSE-SMITH, Rhop. exot. Pedal.  
 iv; *P. phrasina*, fig. 1, *phrasiclea*, fig. 2, *phrasia*, fig. 3, *petronius*, figg.  
 4, 5, *plautius*, fig. 6, S. America, GROSE-SMITH, Rhop. exot. iii, Saty-  
 ridæ Pedaliodes v, pp. 17-19 : n. spp.  
*Pronophila mena*, Bolivia, fig. 1, *sagartia*, Colombia, fig. 2, GROSE-SMITH,  
 Rhop. exot. Satyr. Pronoph. i, n. sp.  
*Satyrus*; varr. from Thian Schan, STAUDINGER, p. 336, Deutsche ent.  
 Zeitschr. Lep. xii.  
*Xenica tasmanica*, Tasmania, LYEEL, p. 110, pl., Victorian Natural. xvii,  
 n. sp.  
*Zethera musa* = (*mixta* Fruhst.) description and figure, p. 162, pl. cc, fig. 4,  
 NICÉVILLE, J. Bombay Soc. xiii.

## LIBYTHEIDÆ, ELYMNIIDÆ, LEMONIIDÆ.

- Elymnias saueri* ♀, description and figure, NICÉVILLE, p. 164, pl. dd,  
 fig. 8, J. Bombay Soc. xiii.  
*Libythea geoffroyi* ♂, pl. ii, fig. 8, p. 102, PAGENSTECHER, Zoologica xxvii;  
*L. celtis*, pupa, CHAPMAN, pp. 284-286, Ent. Rec. xii.  
*Limonia* (sic) *bolena* = (*Adelotypa xanthobrunnea* Warr.), WARREN, p. 225,  
 Nov. Zool. vii.

## LYCÆNIDÆ.

- The Androconia of numerous *Lycæna* (110 spp.) described and figured and  
 phylogeny discussed, KÖHLER (743).  
*Argiolaus crawshayi*, Kikuya, BUTLER, p. 926, pl. lviii, fig. 3, P. Zool.  
 Soc. London 1900, n. sp.  
*Arrhopala comica*, Burma, NICÉVILLE, p. 170, pl. ee, fig. 18, J. Bombay  
 Soc. xiii; *A. carolina*, *buruensis*, Buru, HOLLAND, p. 78, Nov. Zool.  
 vii : n. spp.  
*Alcides thyra* var. (*simplex* on plate) figg. 3, 4, *mars*, figg. 5, 6, *taikosama*,  
 figg. 7-9, GROSE-SMITH, Rhop. exot. iii, Lycænidae (African) pl. xxvi,  
 pp. 121-123.  
*A. zilka*, S. Africa, figg. 1, 2, GROSE-SMITH, Rhop. exot. iii, Lycænidae  
 (African) pl. xxvi, p. 121, n. sp.  
*Amblypodia hainana*, Hainan, CROWLEY, p. 508, P. Zool. Soc. London  
 1900, n. sp.  
*Axioceres mendeche*, figg. 12-14, *punicea*, figg. 15-17, GROSE-SMITH, Rhop.  
 exot. iii, Lycænidae (African), pl. xxvi, pp. 124, 125.



- A. bambana*, E. Africa, GROSE-SMITH, Rhop. exot. iii, Lycænidae (African), pl. xxvi, figg. 10, 11, p. 123, n. sp.
- Catochrysops* cf. *Euchrysops*.
- Chilades*; *Zisera unigemmata* referred to this, BUTLER, p. 111, P. Zool. Soc. London 1900.
- Chliaria xenia*, figg. 8-10, GROSE-SMITH, Rhop. exot. Lyc. Or. xxiii.
- Cupido* and *Lycæna*, distinctions, components, BUTLER, p. 124, Entomologist xxxiii.
- C. soalaticus*, Madagascar, KARSCH, p. 369, Ent. Nachr. xxvi, n. sp.
- Cyaniris*; list of species, BUTLER, Ann. Nat. Hist. v, pp. 441-451; *C. ladon* Cr. = (*pseudargiolus* Boisd.), BUTLER, p. 91, Canad. Ent. xxxii; *C. ladon*, not to be used, ELWES, p. 116, t. c.
- C. timorensis*, Timor, p. 443, *splendens*, Perak, *imperatrix*, Siam, p. 444, BUTLER, Ann. Nat. Hist. v, n. spp.
- Cyclurius sharpix*, E. Africa, BUTLER, p. 929, pl. lviii, figg. 4, 5, P. Zool. Soc. London 1900, n. sp.
- Deudorix dieden* Madagascar, KARSCH, p. 369, Ent. Nachr. xxvi, n. sp.
- Epamera arborifera*, East Africa, BUTLER, p. 927, pl. lviii, fig. 2, P. Zool. Soc. London 1900, n. sp.
- Euchrysops* n. g. for pt. of *Catochrysops* type *cnejus*, BUTLER, p. 1, Entomologist xxxiii.
- Gerydus buruensis*, Buru, HOLLAND, p. 67, Nov. Zool. vii, n. sp.
- Hypochlorosis buruana*, Buru, HOLLAND, p. 79, t. c. n. sp.
- Hypochrysops alix* figg. 1, 2, *rufinus*, figg. 3, 4, *cleon*, figg. 5, 6, *cleonides*, figg. 7, 8, GROSE-SMITH, Rhop. exot. iii, Lycænidae (oriental), pl. xxiv; *H. mirabilis*, pl. ii, fig. 2 ♂, fig. 3 ♀, pp. 106 & 262, PAGENSTECHER, Zoologica xxvii.
- H. alix*, *cleon*, p. 88, *cleonides*, p. 89, New Guinea, GROSE-SMITH, Nov. Zool. vii, n. spp.
- Hypolycæna alcestis*, figg. 1-3, GROSE-SMITH, Rhop. exot. Lyc. Or. xxiii.
- H. margites*, Madagascar, MABILLE, p. 375, Bull. Mus. Paris 1899, n. sp.
- Jamides grata*, figg. 1-3, *seminiger*, figg. 4-6, *timon*, figg. 7-9, *purpurata*, figg. 10-12, GROSE-SMITH, Rhop. exot. Lycæn. Or. xxii, Jamides I.
- J. carola*, Solomon Islands, p. 13, figg. 13, 14, *tamborana*, Tambora, p. 14, fig. 15, GROSE-SMITH, t. c.; *J. porphyris*, Buru, HOLLAND, p. 75, Nov. Zool. vii, n. spp.
- Jolaus auriivillii* n. n. for *sapphirinus* Aur. nec Röh., RÖBER, p. 204, Ent. Nachr. xxvi.
- Lampides buruana*, Buru, HOLLAND, p. 76, Nov. Zool. vii, n. sp.
- Lycæna arion* varr., FROHAWK, pl. iii, figg. 6, 7, Entomologist xxxiii; *L. corydon* var. n. *fowleri*, SOUTH, p. 104, pl. iii, figg. 4, 5, Entomologist xxxiii; BELLAMY, t. c., p. 157; *L. alcedo* var. n. *noah*, HERZ, p. 442, Annuaire Mus. St. Petersb. v; *L. icarus* varieties, FUCHS, pp. 31-35, Jahrb. Nassau. Ver. liii; *L. bellargus* var. n. *krodeli*, *L. corydon* var. *cinnus*, GILLMER, pp. 50-52, pl., Illustr. Zeitschr. Ent. v; *L. argyrognomon*, arctic var., STRAND, p. 226, Ent. Nachr. xxvi; *L. pheretes* var. n. *sikkima*, BATH, p. 199, Entomologist xxxiii; *L. pheretes*; *sikkima* and *altissima* are varr., ELWES, p. 223, Entomologist xxxiii; *L. jolas*, natural history, AIGNER-ABAFI, Illustr. Zeitschr. Ent. v, p. 225; *L. corydon*, egg and oviposition, GILLMER, Illustr. Zeitschr. Ent. v.
- L. sitalces*, Madagascar, MABILLE, p. 723, Ann. Soc. ent. France lxviii; *L. donina*, Java and Celebes, SNELLEN, p. 262, Tijdschr. Ent. xliii; *L. elaborata*, Queensland, LUCAS, p. 137, P. Soc. Queensland xv; *L. mela*, Colorado to Colombia, STRECKER, p. 20, Suppl. iii; *L. yukona*, Alaska, HOLLAND, p. 416, Ent. News Philad. xi: n. spp.

- Lycænesthes pegobates*, Buru, HOLLAND, p. 71, Nov. Zool. vii, n. sp.  
*Nacaduba cladara*, p. 73, *pæcilia*, p. 74, *glenis*, p. 75, Buru, HOLLAND, p. 75, t, c. n. spp.  
*Ogyris meeki*, New Guinea, ROTHSCHILD, p. 274, pl. v, fig. 1, Nov. Zool. vii; *O. ianthis*, Australia, LOWER, p. 52, pl. i, figg. 1-4, P. Linn. Soc. N. S. Wales xxv : n. spp.  
*Plebeius argus* and *ægon*, distinctions, TUTT, p. 38, Ent. Rec. xii.  
*Polyommatus dispar*, var. n. *borodowskyi*, GRUM-GRSHIMAILO, p. 459, Annuaire Mus. St. Petersb. iv; *P. alciphron* var. *intermedia*, p. 330, *P. dorilis* var. *fulvior*, p. 331, STEFANELLI, Bull. Soc. ent. Ital. xxxii; *P. hippothoe* varr. p. 240, pl. xiv, fig. 5 and p. 242, TER HAAR, Tijdschr. Ent. xliii; *P. dorilis* varr., OUDEMANS, p. 23, Tijdschr. Ent. xliii, Versl.; *P. dorilis* varr. n. *brantsi*, *uyeni*, TER HAAR, p. 235, pl. xiv, figg. 2, 3, Tijdschr. Ent. xliii; *P. corydon*, egg, FROHAWK, p. 300, Entomologist xxxiii.  
*Pseudonotis milo*, figg. 6, 7, GROSE-SMITH, Rhop. exot. Lyc. Or. xxxiii.  
*Sinthusa verena* figg. 11-13, GROSE-SMITH, t. c.  
*Syntarucus* n. g. type *Tarucus telicanus*, BUTLER, p. 929, P. Zool. Soc. London 1900.  
*Talicada ecaudata* provisional n. n., BUTLER, p. 61, Ann. Nat. Hist. v.  
*T. buruana*, Buru, HOLLAND, p. 72, Nov. Zool. vii, n. sp.  
*Thecla*; the type, BUTLER, p. 168, Entomologist xxxiii; *T. melinus*, larva, COCKERELL, p. 578, Ent. News Philad. xi.  
*T. mirabelle*, Utah, BARNES, p. 43, Canad. Ent. xxxii, n. sp.  
*Theclinesthes eremicola* ♂, pl. ii, fig. 9, p. 123, PAGENSTECHE, Zoologica xxvii.  
*Thysonotis phroso*, figg. 9, 10, *aryanus*, figg. 11-13, GROSE-SMITH, Rhop. exot. iii, Lycænidae (oriental), pl. xxiv; *T. illustris*, p. 168, pl. xx, figg. 14, 15, *korion*, fig. 16, *triopus*, fig. 17, figured, NICÉVILLE, p. 170, J. Bombay Soc. xiii.  
*Zeritis thysbe*, variation, FELTHAM, P. ent. Soc. London 1900, pp. xix-xxii.  
*Zizera*; revision with figures of 10 species, synonymy, etc., BUTLER, pp. 104-111, pl. xi, P. Zool. Soc. London 1900.  
*Z. subcærulea*, Buru, HOLLAND, p. 69, Nov. Zool. vii, n. sp.

## HESPERIIDÆ.

- Plate of N. American *Hesperiidæ*, with explanatory details, SKINNER, pp. 413-415, Ent. News Philad. xi.  
*Adopæoides* n. g., p. 470 for *Ancyloxypha simplex*, pl. xcii, figg. 30-33, and *A. bistriata* n. sp. Mexico, pl. xcii, fig. 34, p. 471, GODMAN, Biol. Centr.-Amer. Rhop. ii.  
*Aides*; type *Papilio epitus* Cr. figured, pl. xcvi, figg. 22, 23, and includes *H. æstria* Hew., p. 513, GODMAN, t. c.  
*A. dysoni*, pl. xcvi, fig. 24, p. 514, *elara*, figg. 25, 26, p. 515, Centr. America, GODMAN, t. c. n. spp.  
*Amblyscirtes*, characters, p. 503, *A. nanno* figured, pl. xcvi, figg. 31-34, GODMAN, t. c.  
*A. folia*, pl. xcvi, figg. 35, 36, *fluonia*, figg. 37-39, p. 504, *elissa*, figg. 40, 41, p. 505, Mexico, GODMAN, t. c. n. spp.  
*Ancyloxypha arene*, figure (as *A. myrtis*), pl. xcii, figg. 35-38, p. 472, GODMAN, t. c.  
*Apantus menes*, pl. xcii, fig. 22, p. 468, GODMAN, t. c.  
*Atalopedes campestris*, ♂ pl. xciii, fig. 11, GODMAN, p. 479, t. c.

- Atrytone*; characters and composition, p. 490, the following figured, *delaware*, pl. xciv, figg. 4-6, *zabulon*, fig. 7, *rolla*, figg. 8-10, *vitellius*, figg. 11-13, *helva*, figg. 25-29, *melane*, figg. 30-34, *niveolimbus*, figg. 41-43, *inimica*, figg. 44-47, GODMAN, t. c.
- A. mella*, pl. xciv, figg. 14-16, p. 492, *mellona*, figg. 17-19, *myron*, figg. 20-24, p. 493, *gala*, figg. 35, 36, *monticola*, figg. 37-40, p. 495, Central America, GODMAN, t. c. n. spp.
- Atrytonopsis* n. g., p. 497, for *Hesperia deva*, figured, pl. xcv, figg. 6-10, *Pamphila pittacus*, figg. 11-13, *P. python*, figg. 14, 15, GODMAN, t. c.
- Augiades*; characters, p. 484, Biol. Centr.-Amer. Rhopal. ii.
- A. heras*, pl. xciii, figg. 24-26, *hecale*, figg. 27-29, p. 484, GODMAN, t. c. n. spp.
- Butleria anomala*, pl. xcii, figg. 4-6, *eryonas*, figg. 9-11, p. 465, Biol. Centr.-Amer. Rhopal. ii.
- B. microsticta*, pl. xcii, figg. 1-3, p. 464, *pulchra*, figg. 7, 8, p. 465, *lalage*, figg. 12, 13, *octomaculata*, figg. 14, 15, *faula*, figg. 16, 17, p. 466, Centr. America, GODMAN, t. c. n. spp.
- Buzygus* n. g. near *Atrytone*, for *B. idothea* n. sp., Costa Rica, p. 497, pl. xcv, figg. 1-5, GODMAN, t. c.
- Calpodus ethlius*, pl. xcv, figg. 45, 46, p. 507, GODMAN, t. c.
- Capila hainana*, Hainan, CROWLEY, p. 510, P. Zool. Soc. London 1900, n. sp.
- Carystus*, characters, p. 582, *C. claudianus*, pl. cii, figg. 1-4, *cynasta*, figg. 5, 6, *ebusa*, figg. 7-9, *marcus*, fig. 10, *aurelius*, figg. 11, 12, *diversus*, figg. 13, 14, *fantasos*, fig. 15, *artona*, figg. 16-18, *coryna*, fig. 19, GODMAN, Biol. Centr.-Amer. Rhopal. ii.
- Casyapa beata*, larval habits, ILLIDGE, p. 136, P. Soc. Queensland xv.
- Catia* n. g., p. 481, for *Hesperia druryi* Latr. nec auct., synonymy, p. 482, ♂, pl. xciii, fig. 18, GODMAN, Biol. Centr.-Amer. Rhop. ii.
- Celænorrhinus opalinus*, E. Africa, BUTLER, p. 942, pl. lviii, figg. 10, 11, P. Zool. Soc. London 1900, n. sp.
- Chærephon* n. g. near *Hylephila*, p. 474, for *Pamphila citrus* Mab., pl. xciii, figg. 1-4, and *rhesus* Edw., figg. 5-7, GODMAN, Biol. Centr.-Amer. Rhop. ii.
- Cobalopsis* n. g., p. 537, for *Pamphila edda* Mab., pl. xeviii, figg. 29-32, and *Carystus dyscritus* Mab., fig. 33, p. 538, GODMAN, t. c.
- Cobalus*, defined, p. 534, *C. fidicula*, figured, pl. xcviii, figg. 14-16, *argus*, figg. 19-21, *cannæ*, figg. 25-27, *warra*, figg. 28, GODMAN, t. c.
- C. gabina*, p. 535, pl. xeviii, figg. 17, 18, *percosius*, p. 536, figg. 22-24, Centr. America, GODMAN, t. c. n. spp.
- Copacodes aurantiaca*, figure, pl. xcii, figg. 39-42, GODMAN, p. 473, t. c.
- Cydrus* n. g., p. 512, near *Prenes*, for *C. navolus* n. sp., Central America, p. 513, pl. xcvi, figg. 19-21, GODMAN, t. c.
- Doberes mexicanus*, cocoon described, BARRETT, p. 234, Canad. Ent. xxxiii.
- Eagris plicata*, E. Africa, BUTLER, p. 941, pl. lviii, figg. 8, 9, P. Zool. Soc. London 1900, n. sp.
- Eudamus biolleyi*, Costa Rica, MABILLE, p. 230, Bull. Soc. ent. France 1900, n. sp.
- Euroto* n. g., p. 549, type *Pamphila compta* Butl. figured, pl. xcix, figg. 28-31, with *E. lyde*, figg. 32, 33, *micythus*, figg. 34, 35, *chlorocephala*, fig. 36, p. 551, *ceagrus*, figg. 37-39, p. 552, n. spp., Central America, GODMAN, Biol. Centr.-Amer. Rhopal. ii.
- Eutychide* n. g., type *Hesperia physcella* Hew., p. 544, *E. cingulicornis* H.-S., pl. xcix, figg. 6-9, *midia* Hew., figg. 10-13, *achelous* Plötz, *umber* H.-S., p. 547, *asema* Mab., figg. 22, 23, *subordidus* Mab., p. 548, and the following n. spp., *ochus*, figg. 14-16, *orthos*, figg. 17-19, p. 546, *lycortas*, figg. 20, 21, p. 547, Centr. America, GODMAN, t. c.

- Halotus* n. g. near *Amblyscirtes*, for *H. saxula* n. sp., Costa Rica, GODMAN, p. 505, t. c.
- Hesperilla masteri*, Australia, WATERHOUSE, p. 54, pl. i, figg. 5-8, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Heteropterus morpheus* var. n. *phantasos*, STICHEL, p. 137, Berlin. ent. Zeitschr. xlv.
- Hylephila phylæus*, p. 476, ♂, pl. xciii, fig. 8, GODMAN, Biol. Centr.-Amer. Rhopal. ii.
- Ismene lucescens*, Queensland, LUCAS, p. 138, P. Soc. Queensland xv, n. sp.
- Lerema accius*, pl. xcix, fig. 44, p. 554, *bipunctata*, figg. 45-47, GODMAN, Biol. Centr.-Amer. Rhopal. ii.
- L. peneia*, Panama, id. t. c., p. 555, pl. xcix, figg. 48, 49, n. sp.
- Lerodea eufala*, pl. xcvi, figg. 16-18, p. 500, GODMAN, t. c.
- L. dysaules*, Mexico, pl. xcvi, figg. 19, 20, p. 500, GODMAN, t. c. n. sp.
- Maistor* n. g., p. 567 for *Hesperia bellus* Edw., pl. c, fig. 36, and *M. anubis*, p. 568, pl. c, figg. 32-35, *perigenes*, p. 569, pl. c, figg. 37, 38, n. spp., Mexico, GODMAN, t. c.
- Megetias* n. g., p. 571, type *Hesperia tripunctata* Latr., figured, pl. ci, figg. 1, 2, 3, with the following n. spp. from Central America, *M. jera*, p. 572, pl. ci, figg. 4, 5, *labdacus*, figg. 6, 7, *abasus*, fig. 8, p. 573, *fraus*, fig. 12, p. 574, *leucone*, figg. 19-21, p. 575; also to this genus *Cobalus telata* H.-S. figured, pl. ci, figg. 13-15, *Pamphila epiberus* Mab. figg. 16-18; GODMAN, t. c.
- Methion* n. g., p. 563, for *M. melas* n. sp., Guatemala, p. 564, pl. c, figg. 22, 23, GODMAN, t. c.
- Metiscus* n. g., p. 562, for *M. atheas* n. sp., Centr. and S. America, p. 563, pl. c, figg. 20, 21, GODMAN, t. c.
- Metrocles* n. g., p. 558, for *M. leucogaster*, n. sp., Panama, p. 559, pl. c, figg. 8, 9, GODMAN, t. c.
- Metron* n. g., p. 557, for *P. chrysogaster* Butl., figured, pl. c, figg. 4-7, GODMAN, t. c.
- Mnasalcas* n. g., p. 567 for *Pamphila uniformis* Butl., figured, pl. c, figg. 30, 31, GODMAN, t. c.
- Mnasilus* n. g., p. 569, for *M. penicillatus* n. sp., Mexico, p. 570, pl. c, figg. 39-42, GODMAN, t. c.
- Mnasinous* n. g., p. 561, for *M. patage* n. sp., Centr. America, p. 562, pl. c, figg. 17-19, GODMAN, t. c.
- Mnasitheus* n. g., p. 565, for *M. cephis* n. sp., Mexico, p. 566, pl. c, figg. 26, 27 and including *Pamphila simplicissima* H.-S., p. 566, pl. c, figg. 28, 29, GODMAN, t. c.
- Mæris* n. g., p. 556, type *Talides striga* Hübn., figured, pl. c, figg. 1, 2, with *M. hyagnis* n. sp., Mexico, p. 557, pl. c, fig. 3, GODMAN, t. c.
- Molo* n. g., p. 579, for *Hesperia heræa* Hew., figured, pl. ci, figg. 34-37, GODMAN, t. c.
- Morys* n. g. for *Apantus valerius* Möschl., p. 541, figured, pl. xcvi, figg. 45-47, GODMAN, t. c.
- Mucia* n. g., p. 540, for *M. thyia* n. sp., Centr. and S. America, p. 541, pl. xcvi, figg. 42-44, GODMAN, t. c.
- Niconiades*, characters, p. 524, *N. xanthaphes*, pl. xcvi, figg. 21, 22, *cæso*, figg. 23-25, *merenda*, figg. 26, 27, *viridiceps*, figg. 28, 29, GODMAN, t. c.
- Ourisma* Scudd., characters, p. 469, *O. powesheik* figured (as *Paradopæa garita*), pl. xcii, figg. 23-25, *O. garita* (as *P. calega*), figg. 26-29, GODMAN, t. c.
- Ochlodes novi sexes*, p. 483, pl. xciii, figg. 19-23, GODMAN, t. c.
- Oeonus* n. g. near *Perimeles*, p. 539, for *Oe. pyete* n. sp., Mexico, p. 540, pl. xcvi, figg. 38-41, GODMAN, t. c.



- Onophas* n. g., p. 538, for *Pamphila columbaria* H.-S., figured, pl. xcviii, figg. 34-37, GODMAN, t. c.
- Oxyntes* n. g., p. 527, for *Goniloba corusca*, figured, pl. xcvii, figg. 30-33, GODMAN, t. c.
- Padraona epictetus*, p. 582, pl. ci, figg. 44-46, GODMAN, t. c.
- Pamphiliinae*: the subfam. discussed, GODMAN, pp. 461-463, Biol. Centr.-Amer. Rhopal. ii. In the following pages of the work many American species are referred to other genera than those in which they have hitherto been placed. For complete information on this point reference must be made to the work. For synonymy a similar course must be pursued as the work does not indicate what is new and what merely repetitive.
- Pamphila dardaris*, pl. xcii, figg. 18-21, p. 467; *P. Edw.* to *Erinys*, p. 478, ♂, pl. xciii, figg. 9, 10, GODMAN, t. c.
- P. darideus*, Brazil, GODMAN, p. 467, t. c. n. sp.
- Papias* n. g., p. 559, type *Hesperia infusata* Plötz, figured, pl. c, figg. 10, 11, with *P. dictys*, p. 560, pl. c, figg. 12, 13, *microsema*, figg. 14, 15, *phainis*, fig. 16, p. 561, n. spp., Centr. America, GODMAN, t. c.
- Paracarystus* n. g., p. 587, type *Cobalus hypargyra* H.-S., figured, pl. cii, figg. 20-23, GODMAN, t. c.
- Paraides* n. g., p. 515, for *Hesperia ocrinus* Plötz, figured, pl. xevi, figg. 27-30, *egita* Hew., GODMAN, t. c.
- P. asilas*, Venezuela, GODMAN, p. 515, t. c. n. sp.
- Paratrytone* n. g., p. 487, for *P. rhexenor*, pl. xciii, figg. 41-43, *polyclea*, figg. 44, 45, Mexico, n. spp., p. 488, GODMAN, t. c.
- Parphorus* n. g., p. 576, for *Phlebodes storax* Mab., figured, pl. ci, figg. 22-25, GODMAN, t. c.
- Perimeles* n. g., p. 542, for *Hesperia remus* Fab., figured, pl. xcix, figg. 1-3, GODMAN, t. c.
- Phanis* n. g., p. 548, for *Hesperia justinianus* Latr., figured, pl. xcix, figg. 24-27, GODMAN, t. c.
- Phemiades proprius*, figured, pl. xcvii, fig. 34, p. 528, GODMAN, t. c.
- Phereus* n. g., p. 578, type *Carystus epidius* Mab., figured, pl. ci, figg. 32, 33, GODMAN, t. c.
- Phlebodes*, type and characters, p. 552, *P. tiberius*, figured, pl. xcix, figg. 40-43, GODMAN, t. c.
- Phycanassa psaumis*, Mexico, GODMAN, p. 489, pl. xciv, figg. 2, 3, t. c. n. sp.
- Poanopsis* n. g., type *Pamphila puzillius*, p. 486, figured, pl. xciii, figg. 37-40, GODMAN, t. c.
- Prenes*, characters, p. 507, *P. evadnes*, figure, pl. xcv, figg. 47, 48, *pauper*, pl. xevi, figg. 1-3, *nero*, figg. 4-7, *philippina*, figg. 8, 9, *ares*, figg. 10-12, *ocola*, figg. 13-15, *vala*, figg. 16-18, GODMAN, t. c.
- Pyrgus polingii*, Arizona, BARNES, p. 44, Canad. Ent. xxxii, n. sp.
- Rhinthon* n. g., p. 530, type *Proteides chiriquensis* Mab., figured, pl. xcvii, figg. 41-44, and *cynea*, pl. xcviii, figg. 1-3, *melius*, figg. 7, 8, and the following n. spp. from Central America, *alus*, p. 532, pl. xcviii, figg. 4-6, *epaphus*, figg. 9, 10, *megalops*, figg. 11-13, p. 533, GODMAN, Biol. Centr.-Amer. Rhopal. ii.
- Stomyles*, characters, p. 501, *S. tolteca* figured, pl. xcv, figg. 21-23, *comus* figg. 25, 26, *neruus*, figg. 27-30, GODMAN, t. c.
- S. florus*, Mexico, p. 502, pl. xcv, fig. 24, GODMAN, t. c. n. sp.
- Syrichthus inachus* var. *thibetana*, AUSTAUT, p. 48, Naturaliste xxii.
- Tagiades multipunctatus*, Hainan, CROWLEY, p. 510, P. Zool. Soc. London 1900, n. sp.
- Telicota mingo*, habitat queried, HOLLAND, p. 85, Nov. Zool. vii.
- Telles* n. g., p. 518, for *Pap. arcalaus* Cr., figured, pl. xevi, fig. 36, GODMAN, Biol. Centr.-Amer. Rhopal. ii.

- Thargella*, n. g., p. 564, for *T. fuliginosa* n. sp., Centr. and S. America, p. 565, pl. c, figg. 24, 25, GODMAN, t. c.  
*Thespius* n. g., p. 519, with numerous S. American forms, the following figured *dalmani*, pl. xcvi, figg. 37-40, *macareus*, figg. 41-43, *ovinia*, pl. xcvi, figg. 1, 2, GODMAN, t. c.  
*Thoon* n. g., p. 529, type *Proteides modius* Mab., figured, pl. xcvi, figg. 35-38, with *T. tuxes* n. sp., Panama, p. 530, pl. xcvi, figg. 39, 40, GODMAN, t. c.  
*Thymelicus vibex*, synonymy, p. 480, sexes, pl. xciii, figg. 12-16, *athenion*, fig. 17, GODMAN, t. c.  
*Tigais* n. g. near *Cobalus* for *T. salates* n. sp., Costa Rica, pl. xcix, figg. 4, 5, GODMAN, p. 544, t. c.  
*Tirynthia* n. g., p. 523, for *Goniloba confusa*, figured, pl. xcvi, figg. 17-20, GODMAN, t. c.  
*Vacerra* n. g., p. 521, type *H. litana* Hew., figured, pl. xcvi, figg. 3-8, *egla* Hew., figg. 9-11, *canente* Butl., figg. 14-16, GODMAN, t. c.  
*V. lachares*, Costa Rica, p. 523, pl. xcvi, figg. 12, 13, GODMAN, t. c. n. sp.  
*Vehilius* n. g., p. 570 for *Cobalus illudens* Mab., figured, pl. c, figg. 43-46, and *Apustus venosus* Plötz, p. 571, pl. c, figg. 47-49, GODMAN, t. c.  
*Vinius* n. g. for *V. arignote* n. sp., S. America, p. 580, and *Pamphila sagitta* Mab., figured, pl. ci, figg. 42, 43, GODMAN, t. c.  
*Vorates* n. g., p. 577, type *Cobalus decora* H.-S., figured, pl. ci, figg. 26-29, with *V. sapala* n. sp., Panama, p. 578, pl. ci, figg. 30, 31, GODMAN, t. c.  
*Xeniades* n. g. type *P. orchamus* Cr., figured, pl. xcvi, fig. 31, p. 517, with *X. pteris* n. sp., S. and Centr. America, p. 518, pl. xcvi, figg. 32-35, GODMAN, t. c.  
*Zariaspes* n. g., type *Urbanus mys* Hübn., figured, pl. xciii, figg. 30, 31, p. 485, with *Z. mytheus* n. sp., Mexico, figg. 32-36, p. 486, GODMAN, t. c.  
*Zenis* n. g., type *Hesperia minos* Latr., GODMAN, p. 585, t. c.

## HETEROCERA.

Earth cocoons formed by exudation not spinning, SOULE (1256).

## CASTNIIDÆ.

*Aegiale streckeri*, habits, OSLAR, pp. 495-498, Ent. News Philad. xi.

## SPHINGIDÆ.

[Cf. AURIVILLIUS (45), DYAR (354), FAWCETT (406), HAMPSON (545), HOLLAND (595), KARSCH (680), NICÉVILLE (942), PAGENSTECHER (975), PETERSEN (993), ROTHSCILD (1136).]

*Acherontia atropos*, natural history, voice-organ (in Hungarian), AIGNER (13).

*Amphonyx antæus*, early stages, DYAR, p. 256, P. U. S. Mus. xxiii.

*Cautethia grotei*, larva, DYAR, p. 255, t. c.

*Cephonodes hylas*, larva, pupa, pl. xlviii, figg. 13-19, p. 312, FAWCETT, Tr. Zool. Soc. London xv.

*Cherocampa brunnea* Semp. = (*buruensis* Rothschild), ROTHSCILD, p. 274, Nov. Zool. vii; *C. capensis*, larva, pupa, pl. xlvii, figg. 17-19, *osiris*, larva, pupa, pl. xlviii, figg. 3-6, *balsaminæ*, larva, pupa, pl. xlviii,

- figg. 1, 2, *idricus*, larva, pupa, pl. xlix, figg. 1, 2, FAWCETT, pp. 308-310, Tr. Zool. Soc. London xv.
- C. undulata*, Congo, AURIVILLIUS, p. 1050, Ofv. Ak. Forh. lvii; *C. hyporhoda*, India, HAMPSON, p. 39, pl. b, fig. 12, J. Bombay Soc. xiii; *C. kuhni*, Dammer Island, pl. v, fig. 2, *lunata*, Khasia hills, ROTHSCHILD, p. 274, Nov. Zool. vii: n. spp.
- Daphnis dohertyi*, description, p. 242, cut, p. 243, PAGENSTECHER, Zoologica xxix.
- Hemaris tenuis* and *diffinis*, one species, larvæ, SMYTH, pp. 584-589, Ent. News Philad. xi.
- Lophostethus dumotini*, larva, pupa, pl. xlviii, figg. 7, 8, p. 307, FAWCETT, Tr. Zool. Soc. London xv.
- Macroglossa glaucoplaga*, Sikkim, HAMPSON, p. 40, pl. b, fig. 13, J. Bombay Soc. xiii; *M. buruensis*, Buru, HOLLAND, p. 556, Nov. Zool. vii; *M. belinda*, Bismarck Arch., PAGENSTECHER, Zoologica xxix, p. 19: n. spp.
- Oenetus mirabilis* ♀, W. ROTHSCHILD, p. 24, Nov. Zool. vii.
- Protoparce mauritii*, larva, pupa, pl. xlviii, figg. 9-12, p. 311, FAWCETT, Tr. Zool. Soc. London xv; *P. rustica*, larva, SMYTH, p. 485, pls. x, xi, Ent. News Philad. xi.
- P. triangulifera*, Buru, HOLLAND, p. 556, Nov. Zool. vii, n. sp.
- Pseudosmerinthus semnus*, Madagascar, KARSCH, p. 370, Ent. Nachr. xxvi, n. sp.
- Sataspes hauxwellii*, Burma, NICÉVILLE, p. 173, pl. ee, fig. 22, J. Bombay Soc. xiii, n. sp.
- Sphinx convolvuli* var. *nigricans*, CANNAVIELLO, p. 295, Bull. Soc. ent. Ital. xxxii; *S. drupiferarum*, larva, FERNALD, p. 581, pl. xvi, Ent. News Philad. xi.

#### ÆGERIIDÆ (or SESIIDÆ).

- [Cf. BEUTENMÜLLER (115-117), DYAR (360), HAMPSON (545), NICÉVILLE (942), PAGENSTECHER (975), PIEPERS & SNELLEN (1038).]
- Summary of food-habits of larvæ of N. American *Sesiidæ*, BEUTENMÜLLER (117).
- Aegeria chrysophanes*, early stages, ILLIDGE, p. 136, P. Soc. Queensland xv.
- Ichneumonoptera cerulipes*, Sikkim, HAMPSON, p. 43, J. Bombay Soc. xiii, n. sp.
- Lepidopoda* n. g. for *L. heterogyna* n. sp., India, HAMPSON, p. 44, t. c.
- Melittia binghamii*, Burma, NICÉVILLE, p. 174, pl. ee, fig. 24, t. c.; *M. ambigua*, Java, SNELLEN, p. 36, Tijdschr. Ent. xliii: n. spp.
- Paranthrene ruficollaris*, Bismarck Arch., PAGENSTECHER, p. 21, pl. iv, fig. 26, Zoologica xxix, n. sp.
- Sanninoidea græfi* var. *n. barnesi*, BEUTENMÜLLER, p. 254, J. N. York Ent. Soc. viii.
- Sciapteron trizonata*, Sikkim, HAMPSON, p. 43, J. Bombay Soc. xiii, n. sp.
- Sesia bombyliiformis*, egg and young larva, JEFFREY, p. 10, Ent. Mag. xxxvi.
- S. uniformis*, Java, SNELLEN, p. 34, Tijdschr. Ent. xliii; *S. rubripes*, Bismarck Arch., PAGENSTECHER, p. 22, Zoologica, xxix; *S. arctica* [described, p. 208, named p. 377] Alaska, BEUTENMÜLLER, Canad. Ent. xxxii and *S. arctica*, Alaska, BEUTENMÜLLER, p. 499, P. Washington Ac. ii; *S. mariona*, Colorado, BEUTENMÜLLER, p. 254, J. N. York Ent. Soc. viii: n. spp.
- Trichocrota univitta*, Sikkim, HAMPSON, p. 44, J. Bombay Soc. xiii, n. sp.

## BOMBYCES.

[(s. l. including AGARISTIDÆ, CHALCOSIIDÆ, URANIIDÆ, SARROTHRIPINÆ etc.). (For EPIPLEMIDÆ see GEOMETRIDÆ.)]

[Cf. AURIVILLIUS (45), BARNES (71), CHAPMAN (237, 241), DISTANT (331), DOGNIN (340, 341), DRUCE (348, 349, 983), DUDGEON (352), DUPONT (353), DYAR (354, 356, 357, 358, 361, 362), FABRE (385, 386), FAWCETT (406), FUCHS (473), GRUM-GRSHIMAILLO (541), HAMPSON (544, 545, 547, 548), HEYLAERTS (586), HOLLAND (595), JOANNIS (662), KARSCH (673, 676, 678, 679), LAMPA (796), LOWER (828, 829), LUCAS (832), MABILLE (843), MAYER (872, 873), PAGENSTECHER (975), PETERSEN (993), PIEPERS & SNELLEN (1038), POUJADE (1051), PÜNGELER (1060), QUAIL (1061, 1064), REBEL (1072, 1075), ROTHSCHILD (1136), SCHAUS (1151), SONTONNAX (1254), STAUDINGER (1268, 1269, 1270), STRECKER (1289), SWINHOE (1299), TUTT (1340-1342), VAYSSIÈRE & BORDAS (1353), WARREN (1375, 1376).]

Descriptive catalogue of *Nolina* and *Lithosiina*, HAMPSON (544). We refer to this work below as Cat. Lep. Phal. ii: the new genera and species and some of the figures are recorded, but not the synonymy.

The number of species is 162 *Nolina*, 1037 *Lithosiina*.

The classification, families, phylogeny of *Psychides* and *Lachneides* (1340).

Case-making of *Psychides*, assembling of *Bombycides*, FABRE (386).

Larval cases of *Lacosomida* (*Perophorida*), DYAR (358).

*Acanthopsyche opacella*, habits, cases, development, CHAPMAN, Tr. ent. Soc. 1900, pp. 403-410, pl. viii.

*A. carbonarius*, W. Africa, KARSCH, p. 1, Ent. Nachr. xvi; *A. (Æceticoides) minima*, Ceylon, HAMPSON, p. 227, J. Bombay Soc. xiii: n. spp.

*Achroisia* n. g. *Lithosiina*, p. 337, for *A. nuda* n. sp., Brazil, p. 338, HAMPSON, Cat. Lep. Phal. ii.

*Actias mimosa*, larva, cocoon, pl. xlvii, figg. 1-3, p. 302, FAWCETT, Tr. Zool. Soc. London xv.

*Adelocephala pamala*, p. 226, *totoma*, p. 227, PARANA, SCHAUS, J. N. York Ent. Soc. viii, n. spp.

*Adoxonia* n. g. *Lithosiina*, p. 397, for *A. excisa* n. sp., Brazil, p. 398, HAMPSON, Cat. Lep. Phal. ii.

*Adrocampa ? insulsa*, Ecuador, DOGNIN, p. 437, Ann. Soc. ent. Belgique xlv, n. sp.

*Æolonia* n. g. *Lithosiina*, p. 404, for *Æ. multipunctata* n. sp., Birma, p. 405, HAMPSON, Cat. Lep. Phal. ii.

*Æthosia* n. g. *Lithosiina* for *Æ. ectrocta* n. sp., Haiti, HAMPSON, p. 385, t. c.

*Agkonja miranda*, Bolivia, HAMPSON, p. 187, t. c. n. sp.

*Aglossonia* n. g. for *A. flavimarginata* n. sp., Natal, HAMPSON, p. 247, t. c.

*Agylla tumidicosta*, Guatemala, p. 199, *barbicosta*, Brazil, p. 200, *rotunda*, Colombia, p. 201, *involuta*, Brazil, p. 203, *dognini*, p. 205, *strigula*, pl. xxiv, fig. 3, p. 207, Bolivia, *dentifera*, Ecuador, pl. xxiii, fig. 9, p. 208, HAMPSON, t. c. n. spp.

*Altha castaneipars*, larva, p. 88, pl. ii, fig. 8, PIEPERS, Tijdschr. Ent. xliii.

*A. obliquifascia*, Madras, HAMPSON, p. 232, pl. B, fig. 11, J. Bombay Soc. xiii, n. sp.

*Amuria theon*, Venezuela, DRUCE, p. 66, Ann. Nat. Hist. vi, n. sp.

*Apaidia* n. g. type *Callimorpha mesogona* Godt., HAMPSON, p. 467, Cat. Lep. Phal. ii.

*Apateodes palma*, p. 510, *lapitha*, p. 511, Colombia, DRUCE, Ann. Nat. Hist. v, n. spp.



- Arbela watsoni*, Madras, HAMPSON, p. 228, J. Bombay Soc. xiii; *A. salara*, Colombia, DRUCE, p. 513, Ann. Nat. Hist. v : n. spp.
- Arctia*, characters of the N. American species and their larvæ, DYAR (357); *A. caya* ♂ var., FROHAWK, pl. iii, fig. 9, p. 103, Entomologist xxxiii; *A. hebe* var. n. *collaris*, *A. latreillei* var. n. *chinensis*, GRUM-GRSHIMAILO, Annuaire Mus. St. Petersb. iv; *A. phalerata*, life-history, GIBSON, pp. 369-376, Canad. Ent. xxxii.
- A. serarum*, Mongolia, GRUM-GRSHIMAILO, p. 463, Annuaire Mus. St. Petersb. iv, n. sp.
- Ariola continua* Walk., pl. ii, fig. 11, *deflexa* Walk., fig. 10, figures, SWINHOE, Cat. Lep. Het. ii.
- Artaxa arrogans*, Queensland, LUCAS, p. 140, P. Soc. Queensland xv, n. sp.
- Artona albicilia*, *flavipuncta*, pl. B, fig. 22, India, HAMPSON, p. 225, J. Bombay Soc. xiii, n. spp.
- Asinduma exscripta* Walk., pl. ii, fig. 15, figure, SWINHOE, Cat. Lep. Het. ii.
- Aura hemicantha*, Tenimber, pl. xxx, fig. 5, p. 426, *synestramena*, fig. 2, Borneo, *phaeobasis*, Louisiade group, fig. 3, *flavia*, N. Guinea, fig. 7, p. 429, *umbrifera*, Tibet, fig. 14, p. 431, *phaeoplagia*, fig. 4, p. 433, *perihamia*, fig. 6, Java; *ecmelana*, Sangir, fig. 24, p. 438, *fulvia*, Natal, fig. 25, p. 439, *agraphia*, Java, fig. 30, p. 443, *nigriciliata*, Sangir, fig. 19, p. 445, *crocota*, N. Guinea, pl. xxxi, fig. 5, *fulguritis*, Pulo Laut, fig. 6, *birivula*, fig. 30, p. 450, *asaphes*, fig. 31, Borneo, *ectophasca*, N. Australia, fig. 9, p. 451, *hyporhoda*, Sierra Leone, fig. 10, p. 453, *atrimerina*, Sangir, fig. 23, p. 456, *biseriata*, Borneo, fig. 27, p. 458, *eos*, Java, fig. 19, p. 459, *megala*, China, fig. 21, p. 462, *atrifusa*, Queensland, fig. 26, *uniformeola*, Borneo, p. 464, HAMPSON, Cat. Lep. Phal. ii; *A. confina*, pl. xxxv, fig. 2, *xantherythra*, fig. 5, p. 563, *dentifera*, fig. 18, p. 564, New Guinea, id. addenda : n. spp.
- Asuridia* n. g., p. 412, type *Ammatho carnipicta* Butl., with *A. metaphæa* n. sp., Sikkim, p. 413, pl. xxix, fig. 20, HAMPSON, t. c.
- Atosia* n. g. for *Parasa damia* Moore, SNELLEN, p. 92, Tijdschr. Ent. xliii.
- Automeris*, protective attitudes, cocoons, p. 235, *A. janus*, larva, poisonous hairs, p. 236, BARRETT, Canad. Ent. xxxii; *A. coresus*, *viridescens*, larvæ, BERG, p. 207, Commun. Mus. Buenos Aires i.
- A. obscura*, *postalbida*, *flammans*, p. 228, *amanda*, p. 229, S. America, SCHAUS, J. N. York Ent. Soc. viii, n. spp.
- Automolis melea*, Venezuela, *pratti*, Colombia, DRUCE, p. 66, Ann. Nat. Hist. vi, n. spp.
- Bantana albida* Walk., figure, pl. ii, fig. 12, SWINHOE, Cat. Lep. Het. ii.
- Belemnina attidates*, p. 508, *mygdon*, p. 509, Colombia, DRUCE, Ann. Nat. Hist. v, n. sp.
- Billetia* n. g. near *Stauropus*, for *B. rubripuncta* n. sp., Tonkin, JOANNIS, p. 281, Bull. Soc. ent. France 1900.
- Blabioides* n. g., p. 279, type *Pseudoblabe snelleni* Rits., HAMPSON, Cat. Lep. Phal. ii.
- Blenina calena*, Queensland, SWINHOE, p. 81, pl. ii, fig. 10, Cat. Lep. Het. ii, n. sp.
- Bombyx quercus* ♂ var., FROHAWK, pl. iii, fig. 8, p. 103, Entomologist xxxiii.
- Borisa trajectory*, Paraguay, DOGNIN, p. 437, Ann. Soc. ent. Belgique xlv, n. sp.
- Brachisia* n. g. *Lithosiinae*, p. 334, for *B. castaneola* n. sp., Sangir, p. 335, HAMPSON, Cat. Lep. Phal. ii.
- Brachyglene grandis*, Colombia, DRUCE, p. 510, Ann. Nat. Hist. v, n. sp.
- Bruandia* n. g. *Psychida* type *reticulatella*, TUTT, p. 20, Ent. Rec. xii.
- B. reticulatella*, *comitella*, characters, CHAPMAN, p. 90, Ent. Rec. xii.
- Buneca cafraria*, larva, pl. xlvii, fig. 8, p. 303, FAWCETT, Tr. Zool. Soc. London xv.

- B. tanganicae*, p. 21, *rosea*, *inornata*, *pallens*, p. 22, Africa, SONTTHONNAX, Echange xvi, n. spp.
- Calapterote* n. g. *Eupterotidae*, for *C. butleri* n. sp., Buru, HOLLAND, p. 555, Nov. Zool. vii.
- Calidota* n. g. for *Arctia strigosa* Walk., larva of which described, DYAR, pp. 267-270, P. U. S. Mus. xxiii.
- Callidula miokensis* Pag. to *Cleis*, p. 31, pl. iii, figg. 8, 11, PAGENSTECHEB, Zoologica xxix.
- Calligenia limonis*, Queensland, LUCAS, p. 139, P. Soc. Queensland xv, n. sp.
- Callimorpha* referred to *Hypsidæ*, HAMPSON, p. x, P. ent. Soc. London 1900; *C. dominula* var., FUCHS, p. 41, Jahrb. nassau. Ver. liii; *C. dominula* var. n. *crocea*, SCHULTZ, p. 219, Illustr. Zeitschr. Ent. v.
- Callisthenia* n. g. type *Mapha plicata* Butl., HAMPSON, p. 362, Cat. Lep. Phal. ii.
- Callosania promethia*, experiments on mating, MAYER (872, 873).
- Canerkes gloriosus*, Sumatra, pl. v, fig. 6, p. 275, *albivitta*, no locality, p. 276, ROTHSCHILD, Nov. Zool. vii, n. spp.
- Cania bilinea*, larva, PIEPERS, p. 85, pl. ii, fig. 7, Tijdschr. Ent. xliii.
- Caprima hipars*, Solomon Ids., *rotunda*, Louisiade group, HAMPSON, p. 289, Cat. Lep. Phal. ii, n. spp.
- Caripodia* n. g. *Lithosiinae* for *C. chrysargyria*, *metaleuca* n. spp., Trop. Africa, HAMPSON, p. 248, t. c.
- Carsinopodia* n. g., p. 249, type *Gnophria furcifasciata* Butl., HAMPSON, t. c.
- Carthara surynorta*, Mexico and Parana, *oaxacana*, p. 231, *orizava*, Mexico, *pamina*, Parana, p. 232, SCHAUS, J. N. York Ent. Soc. viii, n. spp.
- Caulocera* n. g. type *Chamaita crassicornis* Walk., with *C. xantholopha* n. sp., Pulo Laut, HAMPSON, p. 529, Cat. Lep. Phal. ii.
- Caviria dubia*, Congo, AURIVILLIUS, p. 1056, Ofv. Ak. Forh. lvii, n. sp.
- Celama geminata*, Madagascar, MABILLE, p. 727, Ann. Soc. ent. France lxviii, n. sp.
- Caprimina* n. g. *Lithosiinae*, for *albicollis* Pagenst., HAMPSON, p. 561, Cat. Lep. Phal. ii.
- Celama rufa*, Ceylon, pl. xviii, fig. 2, *encausta*, fig. 3, India, p. 8, *disticta*, fig. 5, India, *aphyla*, fig. 6, California, p. 11, *duplicilinea*, fig. 8, India, p. 12, *streptographia*, Ceylon, fig. 10, p. 13, *eurysonata*, Sumatra, p. 16, fig. 11, *suffusa*, India, fig. 13, p. 18, *appelia*, Brazil, fig. 16, p. 20, *melatopha*, W. Africa, fig. 21, p. 27, *polia*, fig. 22, p. 28, *phaeochroa*, fig. 24, p. 29, India, *microlopha*, W. Africa, fig. 32, p. 31, HAMPSON, t. c. n. spp.
- Ceratonema albidivisum*, Sikkim, HAMPSON, p. 232, J. Bombay Soc. xiii; figure, t. c., pl. i, fig. 10, p. 265 : n. sp.
- Cerura phyllis*, Brazil, DRUCE, p. 517, Ann. Nat. Hist. v, n. sp.
- Chalia pungelerii*, Japan, HEYLAERTS, p. 190, Ann. Soc. ent. Belgique xlv, n. sp.
- Chamaita metamelana*, New Guinea, HAMPSON, p. 565, pl. xxxv, fig. 15, Cat. Lep. Phal. ii, n. sp.
- Charagia virescens*, partial life history, QUAIL, pp. 419-421, Tr. ent. Soc. London 1900.
- Chilena sabrina*, Somaliland, DRUCE, p. 20, pl. i, fig. 2, P. Zool. Soc. London 1900, n. sp.
- Chionæma obliquilineata*, Sikkim, pl. xxvi, fig. 24, p. 299, *ridleyi*, Singapore, pl. xxxiv, fig. 14, p. 300, *obscura*, Queensland, p. 301, *lutipes*, Philippines, pl. xxvii, fig. 1, *nigrilineata*, Sumatra, fig. 2, p. 311, *melanoplagia*, *fumea*, N. Guinea, p. 318, *marshalli*, Natal, fig. 26, p. 325, *infantula*, fig. 10, Borneo, p. 326, HAMPSON, Cat. Lep. Phal. ii, n. spp.
- Chionosis* n. g., p. 359, type *Calligenia apicalis* Zell., with *C. zonata* n. sp., Paramaribo, p. 360, pl. xxviii, fig. 12, HAMPSON, t. c.

- Chrysallactis* n. g. *Lithosiinae* for *C. aureorubra* n. sp., Louisiade Ids., HAMPSON, p. 334, t. c.
- Chrysochlorosia* n. g. *Lithosiinae*, p. 351, type *C. callistia* n. sp., Bolivia, p. 352, HAMPSON, t. c.
- Chrysorabdia alpina*, Tibet, pl. xxiii, fig. 17, p. 184, HAMPSON, t. c. n. sp.
- Chrysoecota* n. g. type *C. auranticeps* n. sp., N. Guinea, pl. xxi, fig. 2, HAMPSON, p. 110, t. c.
- Chrysozana* n. g. *Lithosiinae*, for *C. cræsus* n. sp., Bolivia, HAMPSON, p. 554, t. c.
- Cisthene subjecta*, egg and larva, DYAR, pp. 266–268, P. U. S. Mus. xxiii.
- C. uncinata*, Bogotá, HAMPSON, p. 246, Cat. Lep. Phal. ii, n. sp.
- Cleis dichroa*, *propinqua*, synonymy, HOLLAND, p. 558, Nov. Zool. vii.
- Clemensia roseata*, Brazil, p. 401, *centralis*, Guatemala, pl. xxix, fig. 18, p. 402, *russata*, Costa Rica, fig. 21, p. 403, HAMPSON, Cat. Lep. Phal. ii, n. spp.
- Cletthara herbida* Walk. (as *Dumatha*) figure, SWINHOE, p. 78, Cat. Lep. Het. ii.
- Clisiocampa distria*, popular name, SLINGERLAND, HOWARD, Canad. Ent. xxxii, p. 54.
- C. vulpes*, Chitral, HAMPSON, p. 233, pl. B, fig. 26, J. Bombay Soc. xiii, n. sp.
- Cloëzia* n. g. for *Ichoria parthia* Druce, HAMPSON, p. 345, Cat. Lep. Phal. ii.
- Coloradia doris*, Colorado, BARNES, p. 46, Canad. Ent. xxxii, n. sp.
- Conosia* n. g. for *Lithosia aspersa* Walk., HAMPSON, p. 542, Cat. Lep. Phal. ii.
- Conilepia* n. g. for *Eonistis nigricosta* Leech, HAMPSON, p. 219, t. c.
- Cossus ligniperda*, pupation, ADKIN, MAY, Entomologist xxxiii, p. 128; CARTER, t. c. p. 158; *C. ore* and *ligniperda*, eggs, CHAPMAN, p. 317, Ent. Rec. xii.
- C. stertzi*, Central Asia, PÜNGELER, p. 288, pl. viii, fig. 3, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Crambidia scoteola*, Bolivia, pl. xxi, fig. 25, p. 127, HAMPSON, Cat. Lep. Phal. ii, n. sp.
- Cretonotus albistriga*, larva, imago, p. 50, pl. vi, figg. 3, 4, Ind. Mus. Notes v.
- Crinodes minuta*, Amazons, DRUCE, p. 516, Ann. Nat. Hist. v, n. sp.
- Ctenosia* n. g. type *Pusiola psectriphora* Dist., HAMPSON, p. 130, Cat. Lep. Phal. ii.
- Ctenucha mennisata*, Bolivia, DOGNIN, p. 213, Ann. Soc. ent. Belgique xlv, n. sp.
- Cyclomilla* n. g. for *Mitochrista melanolepia* Dugl., HAMPSON, p. 512, Cat. Lep. Phal. ii.
- Cyclosiella* n. g. for *Hemonia dulcicula* Swinh., HAMPSON, p. 548, t. c.
- Cyclosticta* n. g. for *discata* Schaus, HAMPSON, p. 188, t. c.
- Cynia insulata*, larva, SWAINSON, p. 33, J. N. York Ent. Soc. viii.
- Cyllopoda* etc., see *Geometridæ*.
- Cypra argenna*, Madagascar, MABILLE, p. 724, Ann. Soc. ent. France lxviii, n. sp.
- Cyptonychia* n. g. *Lithosiinae* for *flaviceps* Druce, HAMPSON, p. 253, Cat. Lep. Phal. ii.
- Dalailama*, characters and position, REBEL, p. 107, Deutsche ent. Zeitschr. Lep. xiii.
- Darala consuta*, Queensland, LUCAS, p. 139, P. Soc. Queensland xv, n. sp.
- Darantoides* n. g. *Lithosiinae*, p. 565, for *D. rubroflava* n. sp., New Guinea, pl. xxxv, fig. 13, p. 566, HAMPSON, Cat. Lep. Phal. ii.
- Darna cecata*, Ecuador, p. 213, *abadesa*, Colombia, p. 214, DOGNIN, Ann. Soc. ent. Belgique xlv; *D. formosa*, Bolivia, DOGNIN, p. 438, t. c. : n. spp.

- Dasychira nivalis* var. *obscurata*, STAUDINGER, p. 337, Deutsche ent. Zeitschr. Lep. xii; *D. angulata*, pl. i, fig. 13, p. 415, *nigra*, pl. ii, fig. 19, p. 416, figures, DUDGEON, J. Bombay Soc. xiii; *D. grælandica*, larva, AURIVILLIUS, p. 1137, Ofv. Ak. Forh. lvii; *D. goodi*, parasitic Lep. in nest of, JOANNIS (864).
- D. georgiana*, Natal, p. 314, pl. xlix, fig. 19, larva, pupa, figg. 20, 21, FAWCETT, Tr. Zool. Soc. London xv, n. sp.
- Deroca hidda*, Jaintia Hills, SWINHOE, p. 306, Ann. Nat. Hist. vi, n. sp.
- Desmeocrera congoana*, Africa, AURIVILLIUS, p. 1049, Ofv. Ak. Forh. lvii, n. sp.
- Diacrinia chionea*, p. 56, *diplosticta*, *rhodesiana*, p. 57, S. Africa, HAMPSON, Ann. S. African Mus. ii, n. spp.
- Dialithoptera* n. g., type *Pisara gemmata*, HAMPSON, p. 50, Cat. Lep. Phal. ii.
- Diarhabdosia* n. g. for *Eustixis minima* Butl., HAMPSON, p. 517, t. c.
- Diduga annulata*, Sambawa, p. 539, *pectinifer*, p. 540, *trichophora*, p. 541, Pulo Laut, HAMPSON, t. c. n. spp.
- Diplonyx* n. g. *Lithosiinae* for *D. infumata* n. sp., S. Africa, HAMPSON, p. 249, t. c.
- Disaulota* n. g. for *Areva leptalina* Druce, HAMPSON, p. 189, t. c.
- Disoidemata* n. g. *Lithosiinae*, for *D. osmophora* n. sp., Mexico, HAMPSON, p. 188, t. c.
- Drepana* (*Gogane*) *tetrathyra*, Madagascar, MABILLE, p. 724, Ann. Soc. ent. France lxviii; *D. undulifera*, Tibet, HAMPSON, p. 228, pl. B, fig. 10, J. Bombay Soc. xiii : n. spp.
- Dryopteris adona*, Florida, STRECKER, p. 30, Suppl. iii, n. sp.
- Dudgeonea* n. g. *Cossidae* for *D. leucosticta* n. sp., India and Africa, HAMPSON, p. 227, J. Bombay Soc. xiii.
- Dulichia fasciata*, larva, pl. xlix, figg. 13, 14, p. 314, FAWCETT, Tr. Zool. Soc. London xv.
- Dycladia lydia*, S. Brazil, DRUCE, p. 64, Ann. Nat. Hist. vi, n. sp.
- Earias cloruna* var. *afflatana*, FUCHS, p. 37, Jahrb. Nassau. Ver. liii; *E. insulana*, larva, cocoon, pl. xlix, figg. 25, 26, p. 316, FAWCETT, Tr. Zool. Soc. London xv.
- E. turana*, Transcaspian, GRUM-GRSHIMAILLO, p. 461, Annuaire Mus. St. Petersb. iv; *E. crocea*, Comoro Ids., MABILLE, p. 727, Ann. Soc. ent. France lxviii : n. spp.
- Eilema* Hubn. altered to *Ilema*, HAMPSON, p. 130, Cat. Lep. Phal. ii.
- Emydia cribrum* varr., SOUTH, pp. 67, 68, figg. 1-7, Entomologist xxxiii.
- Etanna* Walk., systematic position and components, SWINHOE, p. 78, Cat. Lep. Het. ii.
- Endagria jordana* var. *suaavis*, pl. v, fig. 7, p. 355, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii.
- Endoxyla anceps*, Java, SNELLEN, p. 40, Tijdschr. Ent. xliii, n. sp.
- Enggophlebus* n. g. (*Eceticinarum*), p. 2, for *E. obesus* n. sp., W. Africa, p. 3, KARSCH, Ent. Nachr. xxvi.
- Epichnopteryx* subg. n., see *Rebelia*; *E. pulla* varr. n. *montana montanella*, HEYLAERTS, p. 189, Ann. Soc. ent. Belgique xlii.
- E. alpina*, Switzerland, HEYLAERTS, p. 189, t. c. n. sp.
- Eressa catoria*, Jaintia Hills, SWINHOE, p. 305, Ann. Nat. Hist. vi, n. sp.
- Estigmene tenuistriata*, Mashonaland, HAMPSON, p. 54, Ann. S. African Mus. ii, n. sp.
- Eucereon confine*, larva, DYAR, p. 262, P. U. S. Mus. xxiii.
- E. atolia*, p. 507, *ino*, *resina*, p. 508, Colombia, DRUCE, Ann. Nat. Hist. v; *E. giganteum*, Colombia, *testaceum*, *E. ? fanum*, Venezuela, DRUCE, p. 65, op. cit. vi; *E. costinotatum*, Brazil, *intranotatum*, Ecuador, DOGNIN, p. 436, Ann. Soc. ent. Belgique xlii : n. spp.



- Euelea herbina*, *dotata*, *baranda*, S. America, p. 230, *chiriquensis*, Chiriqui, p. 231, SCHAUS, J. N. York Ent. Soc. viii, n. spp.
- Eucyane kedar*, Colombia, DRUCE, p. 509, Ann. Nat. Hist. v, n. sp.
- Eudyarina venata*, larva, BERG, p. 208, Comun. Mus. Buenos Aires i.
- Eugoa pluripunctata*, Madagascar, MABILLE, p. 725, Ann. Soc. ent. France lxviii; *E. africana*, Cape Colony, pl. xxxiv, fig. 2, p. 545, *obscura*, Borneo, fig. 16, p. 548, HAMPSON, Cat. Lep. Phal. ii: n. spp.
- Eugonosis* n. g. for *E. angulifer* Schaus, HAMPSON, p. 295, t. c.
- Euleechia* n. n. for *Callarctia* Leech, DYAR, p. 347, Canad. Ent. xxxii.
- Eulimacodes telligii*, Arizona, BARNES, p. 46, t. c. n. sp.
- Euphlycta* n. g. *Limacodidae*, for *E. erastria* n. sp., Java, pl. iv, fig. 8, SNELLEN, p. 93, Tijdschr. Ent. xliii.
- Euprepia*, characters of N. American larvæ, DYAR, p. 46, J. N. York Ent. Soc. viii; *E. caya* var. *americana*, life-history, GIBSON, pp. 321-325, Canad. Ent. xxxii.
- Euproctis flavicosta*, pl. b, fig. 3, and pl. ii, fig. 18, p. 420, *phaea*, India, HAMPSON, p. 234, J. Bombay Soc. xiii, n. spp.
- Eupseudosoma*, referred to *Syntomida*, early stages, DYAR, pp. 258-261, P. U. S. Mus. xxiii.
- Eurosis* n. g. type *Setinochroa trimaculata* Hamps., p. 330, with *E. lineata*, Cape Colony, pl. xxvii, fig. 19, *punctitermia*, Bali, pl. xxviii, fig. 9, *melanopera*, Borneo, fig. 10, p. 331, *annulata*, Calcutta, fig. 11, *metaphacola*, Borneo, fig. 1, p. 332, n. spp., HAMPSON, Cat. Lep. Phal. ii.
- Euryptidia* n. g. type *E. univitta* n. sp., Brazil, HAMPSON, p. 230, t. c.
- Eusemia vulcanica* var. n. *melania*, JOANNIS, p. 280, Bull. Soc. ent. France 1900; *E. butleri*, larva, pupa, pl. xlvii, figg. 14, 15, p. 317, FAWCETT, Tr. Zool. Soc. London xv.
- Eutane alba*, Borneo, pl. xxxiii, fig. 9, p. 496, HAMPSON, Cat. Lep. Phal. ii; *E. triplagata*, Bismarck Arch., pl. ii, fig. 24, p. 59, PAGENSTECHER, Zoologica xxix: n. spp.
- Eutelesia* n. g. for *Nola vulgaris* Druce, HAMPSON, p. 398, Cat. Lep. Phal. ii.
- Eutornopera quinquestriata*, Sikkim, HAMPSON, p. 41, pl. b, fig. 21, J. Bombay Soc. xiii, n. sp.
- Fentonia discosticta*, N. India, HAMPSON, p. 41, t. c. n. sp.
- Fumea*, notes on, CHAPMAN, p. 202, Ent. Rec. xii; *F. casta* varr., CHAPMAN, p. 124, t. c.
- F. scotica*, Scotland, CHAPMAN, p. 320, Tutt Brit. Lep. ii, n. sp. ?; *F. germanica*, Europe, CHAPMAN, p. 125, Ent. Rec. xii: n. spp.
- Garella rotundipennis* Walk., pl. ii, fig. 23, *scoparioides* Walk. (as *Corticata*), fig. 22, figures, SWINHOE, Cat. Lep. Het. ii.
- Gargetta ferreopicta*, Ceylon, HAMPSON, p. 40, J. Bombay Soc. xiii, n. sp.
- Garudinistis* n. g. for *Tospitis eburneana* Walk., HAMPSON, p. 280, Cat. Lep. Phal. ii.
- Gazalina intermixta*, Jaintia Hills, SWINHOE, p. 306, Ann. Nat. Hist. vi, n. sp.
- Gerbatha connexa*, China, LEECH, p. 516, Tr. ent. Soc. London 1900, n. sp.
- Gingla latercula*, Arizona, DYAR, p. 32, J. N. York Ent. Soc. viii, n. sp.
- Giscala intravirens*, S. America, DOGNIN, p. 437, Ann. Soc. ent. Belgique xlv, n. sp.
- Glaucosia* n. g. *Lithosiinae* for *G. agyllia* n. sp., Brazil, HAMPSON, p. 229, Cat. Lep. Phal. ii.
- Gloveria arizonensis*, male, BARNES, p. 48, Canad. Ent. xxxii.
- Gnamptonychia* n. g. for *Atolmis flavicollis* Druce, HAMPSON, p. 251, Cat. Lep. Phal. ii.
- Gogana specularis*, pl. viii, fig. 32, *G. pustularia* Walk. (as *Macaria*), fig. 8, figures, SWINHOE, Cat. Lep. Het. ii.
- G. integra*, Penang, WARREN, p. 98, Nov. Zool. vii, n. sp.

- Gonociliz renifera*, Perak, WARREN, p. 99, t. c. n. sp.  
*Gonometa postica*, larva, cocoon, pl. xlix, figg. 3-5, p. 313, FAWCETT, Tr. Zool. Soc. London xv.  
*Goodia fulvescens*, Congo, SONTTHONNAX, p. 30, Echange xvi, n. sp.  
*Gorgopis bacotii*, S. Africa, QUAIL, p. 421, pl. v, fig. 1, Tr. ent. Soc. London 1900, n. sp.  
*Graphosia* n. g. *Lithosiinae*, for *G. bilineata* n. sp., New Guinea, p. 97, HAMPSON, Cat. Lep. Phal. ii.  
*Graptasura* n. g. type *Cyme polygrapha* Feld., HAMPSON, p. 421, t. c.  
*Guillemeia* n. g. *Saturniidae* near *Goodia*, p. 30, for *G. tristis*, *incana* n. spp., Africa, p. 31, SONTTHONNAX, Echange xvi.  
*Gymnasura* n. g. for *Calligenia saginæa* Turner, HAMPSON, p. 425, Cat. Lep. Phal. ii.  
*Gymnochroma* n. g. for *Nudaria fulvipicta* Hamps., HAMPSON, p. 537, t. c.  
*Gynanisa maia*, larva, pupa, pl. xlvii, figg. 6, 7, p. 304, FAWCETT, Tr. Zool. Soc. London xv.  
*G. albescens*, *semialba*, p. 23, *gigas*, p. 24, Africa, SONTTHONNAX, Echange xvi, n. spp.  
*Hamatomis* n. g. type *Lithosia mexicana* Druce, HAMPSON, p. 514, Cat. Lep. Phal. ii.  
*Harpyia intercalaris*, E. China, p. 470, *syra*, Syria, p. 471, GRUM-GRSHIMAILO, Annuaire Mus. St. Petersb. iv, n. spp.  
*Heliosia* n. g. type *Pallene jucunda* Walk., p. 275, with *H. monosticta*, Borneo, *crocopera*, N. Guinea, n. spp., p. 276, HAMPSON, Cat. Lep. Phal. ii.  
*Hemipsilia* n. g. for *Nudaria coa-vestis* Hamps., HAMPSON, p. 532, t. c.  
*Hepialidae*, definition, SNELLEN, p. 29, Tijdschr. Ent. xliii.  
*Hepialidae*, some points of structure; life-histories, QUAIL (1061).  
*Hepialus virescens*, some points of larval and imaginal structure, QUAIL (1064).  
*H. uralensis*, Olenek Valley, GRUM-GRSHIMAILO, p. 469, Annuaire Mus. St. Petersb. iv, n. sp.  
*Heterocampa mina*, *eusebia*, Colombia, *ionia*, p. 515, *persees*, Amazons, *volana*, Ecuador, p. 516, DRUCE, Ann. Nat. Hist. v, n. spp.  
*Heterogenea foliola*, Java, SNELLEN, p. 103, Tijdschr. Ent. xliii, n. sp.  
*Heterusia hamptoni*, Buru, HOLLAND, p. 557, Nov. Zool. vii, n. sp.  
*Holochrea* n. g. *Lithosiinae* for *H. xanthogramma* n. sp., Sangir, HAMPSON, p. 268, Cat. Lep. Phal. ii.  
*Hyblæa saturata*, pl. ii, fig. 5, *catocaloides*, fig. 3, *erycinoides*, fig. 2, figures, SWINHOE, Cat. Lep. Het. ii.  
*Hyblæa* spp. n., see *Noctuidæ*.  
*Hydrias zemira*, p. 511, *dolosa*, p. 512, Colombia, DRUCE, Ann. Nat. Hist. v; *H. palota*, *pygma*, p. 233, *varona*, p. 234, PARANA, SCHAUS, J. N. York Ent. Soc. viii: n. spp.  
*Hylesia nigricans*, larva, BERG, p. 208, Comun. Mus. Buenos Aires i.  
*H. subaurea*, Mexico, *corevia*, Rio Janeiro, SCHAUS, p. 228, J. N. York Ent. Soc. viii, n. spp.  
*Hypagoptera* n. g. *Lithosiinae* for *H. rufeola* n. sp., Natal, HAMPSON, p. 179, Cat. Lep. Phal. ii.  
*Hypareva* n. g., p. 191, for *H. pogonoda* n. sp., Trop. America, p. 192, HAMPSON, t. c.  
*Hyperborea* n. g. near *Arctia*, for *H. czekanowskii* n. sp., Tunguska Valley, GRUM-GRSHIMAILO, p. 464, Annuaire Mus. St. Petersb. iv.  
*Hyperchirius pumina*, eggs and larvæ, KUNZÉ, pp. 201-205, J. N. York Ent. Soc. viii.  
*Hypermuæpha* n. g. for *Cisthene sanguinea* Butl., HAMPSON, p. 351, Cat. Lep. Phal. ii.  
*Hyperthagylla* n. g. for *Agylla mira* Butl., HAMPSON, p. 192, t. c.

- Hyphantria cunea*, synonymy, DYAR, p. 16, *Canad. Ent.* xxxii; *H. cunea*, see also *Spilosoma*.
- Hyphorma pannosa*, Java, SNELLEN, p. 59, pl. iv, fig. 3; larva, PIEPERS, p. 60, pl. i, fig. 7, *Tijdschr. Ent.* xliii: n. sp.
- Hypopta asema*, Askhabad, PÜNGELER, p. 288, pl. viii, fig. 5, *Deutsche ent. Zeitschr. Lep.* xii; *H. itsalana*, Arizona, STRECKER, p. 30, *Suppl.* iii: n. spp.
- Hyposiccia* n. g. type *H. amnæa* Swinh., HAMPSON, p. 406, *Cat. Lep. Phal.* ii.
- Hypsa aphidas*, larva, pl. xlvii, fig. 16, p. 315, FAWCETT, *Tr. Zool. Soc. London* xv.
- Iethyura spissicornis*, Madagascar, MABILLE, p. 723, *Ann. Soc. ent. France* lxxviii; *I. transecta*, Sikkim, HAMPSON, p. 43, pl. B, fig. 20, *J. Bombay Soc. xliii*: n. spp.
- Idalus pythia*, Bolivia, DRUCE, p. 67, *Ann. Nat. Hist.* vi, n. sp.
- Itema bifasciata*, *phæopera*, S. Africa, p. 131, *setiniformis*, Java, p. 151, pl. xxi, fig. 27, *goniophora*, S. Africa, pl. xxii, fig. 4, p. 154, *nebulifera*, Singapore, fig. 21, p. 161, *flavibasis*, E. Africa, fig. 22, *sarceola*, S. Africa, fig. 23, p. 162, *sokotrensis*, Socotra, fig. 26, p. 166, *xanthocraspis*, Sikkim, fig. 30, p. 169, *pulvereola*, Borneo, fig. 29, p. 170, *discifera*, Natal, pl. xxiii, fig. 4, p. 171, *nigripes*, N. India, fig. 6, p. 175, *virgineola*, S. Africa, fig. 22, p. 178, HAMPSON, *Cat. Lep. Phal.* ii, n. spp.
- Remodes* n. g. *Arctiana*, for *I. heterogyna* n. sp., S. Africa, HAMPSON, p. 53, *Ann. S. African Mus.* ii.
- Illice phæoceps*, Mexico, pl. xxix, fig. 16, p. 366, *orbonella*, Brazil, fig. 32, p. 372, HAMPSON, *Cat. Lep. Phal.* ii; *I. xanthospila*, Brazil, pl. xxxv, fig. 8, id. addenda, p. 562: n. spp.
- Ingura burseræ*, larva, DYAR, p. 271, *P. U. S. Mus.* xxiii.
- Isarta curiosa*, Java, SWINHOE, p. 305, *Ann. Nat. Hist.* vi, n. sp.
- Josiodes semicirculata*, Ecuador, p. 236, *cærulescens*, Colombia, p. 239, HAMPSON, *Cat. Lep. Phal.* ii, n. spp.
- Labanda ceylusalis* Walk., figure, pl. ii, fig. 1, SWINHOE, *Cat. Lep. Het.* ii.
- Lacosoma chiridota*, larval history, DYAR, pp. 178–180, pl. vi, *J. N. York Ent. Soc.* viii.
- Lelia calamaria*, Nilgiris, HAMPSON, p. 234, pl. B, fig. 19, *J. Bombay Soc.* xiii; *L. adalia*, Jaintia Hills, SWINHOE, p. 307, *Ann. Nat. Hist.* vi: n. spp.
- Lambula plicata*, *laniafera*, p. 98, N. Guinea, *pallida*, Borneo, *punctifer*, pl. xx, fig. 19, p. 100, *orbonella*, pl. xxiii, fig. 1, p. 101, N. Guinea, HAMPSON, *Cat. Lep. Phal.* ii, n. spp.
- Lamprochloë* n. g. *Zygmidæ*, for *L. albipuncta* n. sp., Ceylon, HAMPSON, p. 226, *J. Bombay Soc.* xiii.
- Lamprosia* n. g. for *Lithosia eborella* Bois., HAMPSON, p. 217, *Cat. Lep. Phal.* ii.
- Lamprostola* n. g., p. 360, type *Odozana olivacea* Schaus, with *L. nitens* n. sp., Bolivia, p. 362, pl. xxviii, fig. 20, HAMPSON, t. c.
- Lasiocampa populifolia*, rearing of, LAMBILLION, pp. 11, 12, *Ent. Rec.* xii.
- Latoia lepida*, p. 76, pl. ii, figg. 4, 5, *bimaculata*, p. 81, pl. ii, fig. 6, larvae, PIEPERS, *Tijdschr. Ent.* xliii.
- L. gentilis*, Java, SNELLEN, p. 78, pl. iv, fig. 7, t. c. n. sp.
- Lelymena* n. g. *Drepanulidæ* for *L. misalis* n. sp., W. Africa, KARSCH, p. 251, *Ent. Nachr.* xxvi.
- Lemonidæ* (*Crateronyx*), a distinct family, REBEL (1075).
- Lenodora crenata*, Ceylon, HAMPSON, p. 233, *J. Bombay Soc.* xiii, n. sp.
- Leptopepla* n. g., p. 520, *Lithosiina*, for *L. procridiformis* n. sp., Bolivia, p. 521, HAMPSON, *Cat. Lep. Phal.* ii.
- Leucoma salicis* var., FUCHS, p. 44, *Jahrb. nassau. Ver.* liii.

- Leucorhodia* n. g. for *Lithosia ragua* Druce, HAMPSON, p. 354, Cat. Lep. Phal. ii.
- Lexis fulvoola*, pl. xxi, fig. 10, *phæola*, fig. 7, India, HAMPSON, t. c. n. spp.
- Limacodidae* of Java; table of genera, figures of larvæ, PIEPERS & SNELLEN, Tijdschr. Ent. xliii, pp. 45-52, pls. i-iv.
- Limacodes lorquini* Reak. = (*princeps* Staud.), STRECKER, p. 28, Suppl. iii.
- Lithoprocris* n. g. type *L. methyalea* n. sp., Bolivia, HAMPSON, p. 342, Cat. Lep. Phal. ii.
- Lithosia amaurobapha*, p. 725, *pallidicosta*, *umbriger*, *cirrochroa*, *catenata*, Madagascar, MABILLE, p. 726, Ann. Soc. ent. France lxviii; *L. circumducta*, Bismarck Arch., PAGENSTECHER, p. 57, Zoologica xxix : n. spp.
- Lophopteryx eumeta*, Colombia, DRUCE, p. 514, Ann. Nat. Hist. v, n. sp.
- Ludia similax*, larva, cocoon, FAWCETT, pl. xlix, figg. 6, 7, pp. 305, 306, Tr. Zool. Soc. London xv.
- Luffia fercharitella*, habits, CHAPMAN, p. 20, Ent. Rec. xii.
- Lycomorphodes* n. g. type *Trichromia strigosa* Butl., HAMPSON, p. 378, Cat. Lep. Phal. ii.
- Lymantria rosina*, Bismarck Arch., PAGENSTECHER, p. 42, pl. iii, fig. 19, Zoologica xxix; *L. rufofusca*, ? Madagascar, MABILLE, p. 725, Ann. Soc. ent. France lxviii : n. spp.
- Lymantriopsis* n. g. for *Nudaria lacteata* Holl., HAMPSON, p. 465, Cat. Lep. Phal. ii.
- Macaduma micans* Mysel, *fusca*, N. Guinea, HAMPSON, p. 267, t. c.; *M. nigripuncta*, pl. xxv, fig. 7, *albata*, fig. 23, N. Guinea, id. addenda, p. 560 : n. spp.
- Macharophora fumigata*, Bismarck Arch., PAGENSTECHER, p. 63, pl. i, fig. 18, Zoologica xxix, n. sp.
- Macrocossus* n. g. *Cossidae*, for *M. rudis* n. sp., Congo, AURIVILLIUS, p. 1054, Ofv. Ak. Forh. lviii.
- Macroplectra tripunctata*, S. Africa, MABILLE, p. 724, Ann. Soc. ent. France lxviii, n. sp.
- Macrosia* n. g. type *Lithosia fumeola* Walk., HAMPSON, p. 129, Cat. Lep. Phal. ii.
- Malachitis melanochlora*, figure, DUDGEON, pl. i, fig. 7, p. 413, J. Bombay Soc. xiii.
- Masonia* n. g. *Psychidae* type *crassiorrella*, TUTT, p. 20, Ent. Rec. xii; *M.*, characters of species, CHAPMAN, pp. 122-124, Ent. Rec. xii; *M. crassiorrella*, characters, CHAPMAN, p. 91, t. c.
- M. edwardsella*, Aix-les-Bains, TUTT, p. 43, t. c.; *M. mifordella* (Chapman), *hibernicella*, Britain, TUTT, p. 314, Brit. Lep. ii : n. spp.
- Mazeras soteria*, Argentina, DRUCE, p. 509, Ann. Nat. Hist. v, n. sp.
- Megacraspedum 5-punctatum*, ? Madagascar, MABILLE, p. 727, Ann. Soc. ent. France lxviii, n. sp.
- Melaleucia* n. g. type *Nola obliquifasciata*, HAMPSON, p. 78, Cat. Lep. Phal. ii.
- Megalopyge albescens*, *amita*, p. 229, *vulpina*, p. 230, Parana, SCHAUS, J. N. York Ent. Soc. viii, n. spp.
- Melanema sanguinea*, N. Guinea, HAMPSON, p. 414, Cat. Lep. Phal. ii, n. sp.
- Melanographia* n. g. *Noline*, type *N. flexilineata*, HAMPSON, p. 48, t. c.
- Mesoscia pascora*, Parana, SCHAUS, p. 229, J. N. York Ent. Soc. viii, n. sp.
- Mesother nomia*, Colombia, DRUCE, p. 507, Ann. Nat. Hist. v, n. sp.
- Metalobosia* n. g. type *Odozana cuprea* Schaus, HAMPSON, p. 373, Cat. Lep. Phal. ii.
- Metallosia* n. g. *Lithosiinae* for *M. chrysotis* n. sp., Brazil, HAMPSON, p. 555, t. c.
- Metanastria fia*, figured, pl. 8, figg. 17, 18, p. 233, HAMPSON, J. Bombay



- Soc. xiii; *M. psidii*, nests, the barbed hairs, BARRETT, p. 235, *Canad. Ent.* xxxii.
- Metarctia flavicincta*, Congo, AURIVILLIUS, p. 1057, *Ofv. Ak. Forh.* lvii; *M. flavivena*, E. Africa, HAMPSON, p. 40, *Ann. S. African Mus.* iii : n. spp.
- Metareva* n. g. for *M. ænescens* n. sp., Bolivia, HAMPSON, p. 216, *Cat. Lep. Phal.* ii.
- Meterythrosia* n. g. for *Tuina sangala* Druce, HAMPSON, p. 242, t. c.
- Metugoa* n. g. type *Eugoa ochrivena* Hamps., p. 335, with *M. obliquata* n. sp., Singapore, p. 336, HAMPSON, t. c.
- Metoura* n. g., p. 123, for *Scoliacma cervina* Lucas, HAMPSON, t. c.
- Mitochrista ochrorubens*, Madagascar, MABILLE, p. 726, *Ann. Soc. ent. France* lxxiii; *M. cardinalis*, Sikkim, pl. xxxii, fig. 8, p. 480, *sanguitincta*, Batchian, fig. 16, *plumbilineata* = (*lineata* Walk.), Celebes, fig. 11, p. 481, *euprepia*, Borneo, fig. 17, p. 484, *phæoxanthia*, Assam, fig. 24, p. 493, *proleuca*, Sikkim, fig. 28, p. 494, *perpallida* = (*Korawa pallida* Moore), Sikkim, fig. 22, p. 495, HAMPSON, *Cat. Lep. Phal.* ii; *M. vepallida*, Buru, HOLLAND, p. 562, Nov. Zool. vii; *M. cancellata*, pl. ii, fig. 27, *effulgens*, fig. 30, *geminata*, fig. 22, Bismarck Arch., PAGENSTECHER, p. 62, *Zoologica* xxix : n. spp.
- Mimeusemia eonia*, Christmas Is., HAMPSON, p. 64, pl. ix, fig. 7, *Monogr. Christmas Island*, n. sp.
- Mintopola* n. g. for *brasiliensis* Schaus, HAMPSON, p. 189, *Cat. Lep. Phal.* ii.
- Miresa argentifera*, larva, PIEPERS, p. 73, pl. ii, fig. 3, *Tijdschr. Ent.* xliii.
- M. scotopepla*, Sikkim, HAMPSON, p. 231, J. Bombay Soc. xiii, n. sp.
- Mithuna strigifera*, N. India, HAMPSON, p. 123, *Cat. Lep. Phal.* ii, n. sp.
- Monema coralina*, figure, pl. i, fig. 20, p. 268, DUDGEON, J. Bombay Soc. xiii.
- M. capucina*, Java, SNELLEN, p. 56, pl. iv, fig. 2, *Tijdschr. Ent.* xliii, n. sp.
- Monotaxis* n. g. *Lithosiinae*, p. 81, for *M. trimaculata* n. sp., Borneo, p. 182, HAMPSON, *Cat. Lep. Phal.* ii.
- Mulona nigripuncta*, Porto Rico, pl. xxix, fig. 6, p. 387, *grisea*, Jamaica, fig. 30, p. 388, HAMPSON, t. c.
- Narosa castanea*, Madagascar, MABILLE, p. 724, *Ann. Soc. ent. France* lxxiii; *N. holoxanthia*, propolia, India, HAMPSON, p. 232, J. Bombay Soc. xiii; *N. pura*, Java, SNELLEN, p. 91, pl. iv, fig. 6, *Tijdschr. Ent.* xliii : n. spp.
- Natada cochuba*, Parana, SCHAUS, p. 231, J. N. York Ent. Soc. viii, n. sp.
- Neagylla* n. g. for *Areva nevosa* Dogn., HAMPSON, p. 213, *Cat. Lep. Phal.* ii.
- Neasura* n. g., p. 422, type *N. hypophæola* n. sp., Sangir, p. 423, HAMPSON, t. c.
- Nemeophila plantaginis*, varieties, FUCHS, p. 38, *Jahrb. nassau. Ver.* liii.
- Nemeta lohor*, early stages, PIEPERS, p. 58, pl. i, figg. 5, 6, *Tijdschr. Ent.* xliii.
- Neoblavia* n. g. *Lithosiinae* for *N. scoteola* n. sp., India, HAMPSON, p. 105, *Cat. Lep. Phal.* ii.
- Neonota* n. g. *Nolinae*, for *N. mesosticta* n. sp., India etc., HAMPSON, p. 4, t. c.
- Neoplynes* n. g. for *N. cytheræa* Druce, HAMPSON, p. 520, t. c.
- Neoscaptia* n. g. *Lithosiinae* for *N. collateralis* n. sp., New Guinea, HAMPSON, p. 282, t. c.
- Nephelomilta* n. g. for *Lyclene suffusa* Hamps., HAMPSON, p. 468, t. c.
- Nephelesia* n. g. for *Lithosia cæcina* Dr., HAMPSON, p. 214, t. c.
- Nepita simplex*, Bismarck Arch., PAGENSTECHER, p. 60, *Zoologica* xxix, n. sp.
- Nevelskoia* n. g. *Cossidae* near *Hypopta*, for *N. albonubila* Graeser [? n. sp.], GRUM-GRSHIMAILLO, p. 466, *Annuaire Mus. St. Petersb.* iv.
- Ninia saphira*, Congo, AURIVILLIUS, p. 1055, *Ofv. Ak. Forh.* lvii, n. sp.

- Nishada tula*, Sula, SWINHOE, p. 587, Cat. Lep. Het. ii; *N. niveola*, New Guinea, pl. xxi, fig. 3, HAMPSON, p. 111, Cat. Lep. Phal. ii : n. spp.
- Nodozana* n. g. type *N. thricophora* n. sp., Panama, HAMPSON, p. 375, t. c.
- Nola metallopa*, natural history, FROGGATT, pp. 647, 648, plate, Agric. Gaz. N. S. W. xi; *N. implens* Walk. as *Manoba*, figure, pl. viii, fig. 16, SWINHOE, Cat. Lep. Het. ii.
- N. loxoscia*, India, pl. xviii, fig. 33, *pulverea*, pl. xix, fig. 1, Bolivia, p. 33, *phaea*, China, fig. 2, *melanota*, fig. 3, p. 35, *tristicta*, fig. 4, p. 37, India, *achromata*, fig. 8, Solomon Ids., p. 40, *melanogramma*, fig. 12, Australia, p. 43, *melanchysis*, Tonga, fig. 16, p. 44, HAMPSON, Cat. Lep. Phal. ii; *N. vernalis*, S. Australia, LOWER, p. 403, P. Linn. Soc. N. S. Wales xxv : n. spp.
- Nolosia* n. g. *Lithosiinae*, for *N. marmorata* n. sp., Madagascar, HAMPSON, p. 385, Cat. Lep. Phal. ii.
- Norape venata*, Parana, SCHAUS, p. 230, J. N. York Ent. Soc. viii, n. sp.
- Notodonta torra* var. n. *fugei*, BARTEL, p. 337, Ent. Nachr. xxvi.
- N. buddhista*, Centr. Asia, PÜNGELER, p. 289, pl. ix, fig. 2, Deutsche ent. Zeitschr. Lep. xii; *N. tephroxantha*, Centr. Asia, PÜNGELER, pl. iv, fig. 5, p. 116, op. cit. xiii; *N. picta*, N. India, HAMPSON, p. 42, J. Bombay Soc. xiii : n. spp.
- Notolophus inornatus* and *leucostigma* distinguished, BEUTENMÜLLER, p. 206, J. N. York Ent. Soc. viii; *N. inornata*, a valid species, DYAR, p. 143, Psyche ix.
- Nudaridia* n. g. type *Nudaria muscula* Staud., HAMPSON, p. 420, Cat. Lep. Phal. ii.
- Nudaurelia wahlbergi*, larva, pupa, pl. xlvii, figg. 4, 5, p. 303, FAWCETT, Tr. Zool. Soc. London xv.
- N. rectilineata*, Tanganika, SONTTHONNAX, p. 6, *mpalensis*, p. 21, Echange xvi, n. spp.
- Nudosia* n. g. *Lithosiinae*, for *N. fuscifusa* n. sp., Peru, HAMPSON, p. 337, Cat. Lep. Phal. ii.
- Nyctemera burica*, Buru, HOLLAND, p. 560, Nov. Zool. vii; *N. quaternarium*, Bismarck Arch., PAGENSTECHER, pl. ii, fig. 29, p. 54, Zoologica xxix : n. spp.
- Nyctosia* n. g. type *Apistostia tenebrosa* Walk., HAMPSON, p. 253, Cat. Lep. Phal. ii.
- Nystalea nigritorquata*, S. America, DOGNIN, p. 436, Ann. Soc. ent. Belgique xlv, n. sp.
- Oberthuria*; systematic position, REBEL, p. 105, Deutsche ent. Zeitschr. Lep. xiii.
- Ocneria rubea* var., FUCHS, p. 45, Jahrb. nassau. Ver. liii; *O. dispar*, natural history, LAMPA (796).
- O. ? nora*, Asia Minor, STAUDINGER, p. 112, Deutsche ent. Zeitschr. Lep. xiii, n. sp.
- Ocrosia* n. g. for *Lithosia reversa* Walk., HAMPSON, p. 268, Cat. Lep. Phal. ii.
- Odonestis potatoria*, larval longevity, COLTHRUP, p. 10, Entomologist xxxiii.
- O. hilaropa*, Cape York, LOWER, p. 403, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Odozana methemata*, Panama, HAMPSON, p. 353, Cat. Lep. Phal. ii, n. sp.
- Eceticus felinus*, Queensland, LUCAS, p. 140, P. Soc. Queensland xv, n. sp.
- Edaleosia* n. g. for *Ed. nigricosta* n. sp., Sierra Leone, HAMPSON, p. 219, Cat. Lep. Phal. ii.
- Oiketecia gymnophasa*, N. S. Wales, LOWER, p. 39, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Oiketecia omnivorus*, larva, QUAIL, p. 133, Ent. Rec. xii.
- Oleclostera bilinea*, Venezuela, *mediana*, Parana, SCHAUS, p. 232, J. N. York Ent. Soc. viii, n. spp.

- Olona* n. g. *Limacodida*, for *O. albistrigella* n. sp., Java, SNELLEN, p. 101; larva, PIEPERS, pl. iii, fig. 6; Tijdschr. Ent. xliii.
- Omiusia* n. g. for *Tospitis fuscipennana* Walk., HAMPSON, p. 269, Cat. Lep. Phal. ii.
- Onychipodia* n. g. for *Ghoria nigricostata* Butl., HAMPSON, p. 250, t. c.
- Opharus euripides*, Colombia, DRUCE, p. 509, Ann. Nat. Hist. v; *O. amata*, Venezuela, DRUCE, p. 67, op. cit. vi : n. spp.
- Oreta pusilla, roseola*, Queensland, WARREN, p. 99, Nov. Zool. vii, n. spp.
- Orgyia senica*, Chitral, HAMPSON, p. 234, pl. B, fig. 23, J. Bombay Soc. xiii; *O. atra*, Bismarck Arch., PAGENSTECHER, p. 41, Zoologica xxix; *O. oslari*, Colorado, BARNES, p. 45, Canad. Ent. xxxii; *O. libera*, Colorado, STRECKER, p. 29 Suppl. iii : n. spp.
- Orthocraspeda trima*, pl. iii, fig. 1, p. 98, *metaleuca*, pl. iii, fig. 5, p. 101, larvæ, PIEPERS, Tijdschr. Ent. xliii.
- O. sordida*, Java, SNELLEN, p. 99, larvæ, PIEPERS, pl. iii, figg. 2-4, t. c.; *O. nemacera*, India, HAMPSON, p. 232, J. Bombay Soc. xiii : n. spp.
- Osrhoes* n. g. *Hepialide*, for *O. coronta*, n. sp., Colombia, DRUCE, p. 514, Ann. Nat. Hist. v.
- Othorene curvilinea*, Mexico, cinerea, p. 225, lilacina, S. America, irrorata, verana, Mexico, p. 226, SCHAUS, J. N. York Ent. Soc. viii, n. spp.
- Ovipennis* n. g. for *Nudaria dudgeoni* Elw., HAMPSON, p. 410, Cat. Lep. Phal. ii.
- Pachycerosia* n. g. *Lithosiinae* for *P. bipuncta* n. sp., Andamans, HAMPSON, p. 270, t. c.
- Pachypusa (Pachyna?) rectilineata*, Congo, AURIVILLIUS, p. 1052, larva, p. 1053, Ofv. Ak. Forh. lvii, n. sp.
- Palæosia* n. g. for *Lithosia bicosta* Walk., HAMPSON, p. 227, Cat. Lep. Phal. ii.
- Palæosiccia* n. g. *Lithosiinae* for *P. punctata* n. sp., W. Africa, p. 505, HAMPSON, t. c.
- Palpifer sordida*, Java, SNELLEN, p. 30, Tijdschr. Ent. xliii, n. sp.
- Pangora burica*, Buru, HOLLAND, p. 560, Nov. Zool. vii, n. sp.
- Parablavia* n. g. type *Lithosia sadima* Schaus, HAMPSON, p. 125, Cat. Lep. Phal. ii.
- Paragylla* n. g. p. 213, type *Areva amourel* Dogn., HAMPSON, p. 214, t. c.
- Paramulona* n. g. for *Mieza albulata* H.-S., HAMPSON, p. 386, t. c.
- Parasa wellesa* n. n. for *P. prasina* Dyar, DYAR, p. 347, Canad. Ent. xxxii; *P. herbifera*, description, early stages, figures, DUDGEON, p. 263, pl. i, fig. 8 ♂, fig. 9 ♀, J. Bombay Soc. xiii.
- P. metaphæa*, Travancore, HAMPSON, p. 231, J. Bombay Soc. xiii, n. sp.
- Parasiccia* n. g., p. 407, type *Aemene punctatissima* Pouj., with *P. nocturna* n. sp., Assam, p. 410, HAMPSON, Cat. Lep. Phal. ii.
- Paremonia* n. g. for *Hemonia luteicincta* Holl., HAMPSON, p. 557, t. c.
- Pareugoa* n. g. for *Eugoa multistrigata* Hamps., HAMPSON, p. 405, t. c.
- Paropta johannes*, Jordan, STAUDINGER, pl. v, fig. 14, p. 354, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Parorgyia manto*, Georgia, STRECKER, p. 29, Suppl. iii, n. sp.
- Pasteosia* n. g. *Lithosiinae*, p. 217, for *P. irrorata, plumbea*, n. spp., S. Africa, p. 218, HAMPSON, Cat. Lep. Phal. ii.
- Paurophleps* n. g. *Lithosiinae* for *P. minuta* n. sp. Cape Colony, HAMPSON, p. 531, t. c.
- Pelosia tetrasticta*, China, HAMPSON, p. 94, t. c., n. sp.
- Perola lucia*, W. Indies, SCHAUS, p. 231, J. N. York Ent. Soc. viii; *P. repetita, sardites, vafera, salta*, p. 512, *dertosa*, p. 513, Colombia, DRUCE, Ann. Nat. Hist. vi : n. spp.
- Pexinola* n. g. for *P. longirostris* n. sp., Tibet, HAMPSON, p. 79, Cat. Lep. Phal. ii.

- Phaeoclena ovata*, Colombia, DOGNIN, p. 438, Ann. Soc. ent. Belgique xlv, n. sp.
- Phaophlebosia* n. g., type *Setina furcifera* Walk., HAMPSON, p. 109, Cat. Lep. Phal. ii.
- Phaësia* n. g., type *Lithosia lutea* Druce, HAMPSON, p. 128, t. c.
- Phalœnoides basiplaga*, New Guinea, pl. v, fig. 5, *kuhni*, Dammer Is., fig. 4, ROTHSCHILD, p. 275, Nov. Zool. vii, n. spp.
- Phalera lignitea*, S. Africa, MABILLE, p. 723, Ann. Soc. ent. France lxxviii, n. sp.
- Phassus triangularis*, flying to light: eggs, BARRETT, p. 235, Canad. Ent. xxxii.
- Phaudopsis* n. g. *Zygenidae*, for *P. igneola* n. sp., India, HAMPSON, p. 226, J. Bombay Soc. xiii.
- Phaulosia* n. g. for *Eudoliche sordida* Butl., HAMPSON, p. 355, Cat. Lep. Phal. ii.
- Pheosia gnoma leonis* subsp. n., STICHEL, p. 139, pl. ii, figg. 7, 8, Berlin. ent. Zeitschr. xlv.
- P. separata*, Bismarck Arch., PAGENSTECHER, p. 20, Zoologica xxix, n. sp.
- Philea*, *Cybosia* and *Endrosa*, characters and validity, CHAPMAN, p. 230, Ent. Rec. xii.
- Philenora bipuncta*, pl. xxxiii, fig. 21, *punctata*, fig. 22, Madagascar, p. 508, *nudaridia*, Queensland, fig. 4, p. 511, HAMPSON, Cat. Lep. Phal. ii, n. spp.
- Phissama flava*, larva, pl. xlix, fig. 8, *screebilla*, fig. 9, p. 316, FAWCETT, Tr. Zool. Soc. London xv.
- Phragmataecia*? *reticulata*, Centr. Asia, PÜNGELER, p. 115, pl. iv, fig. 2, Deutsche ent. Zeitschr. Lep. xiii; *P. sordida*, Java, SNELLEN, p. 44, Tijdschr. Ent. xliii: n. spp.
- Phryganopsis plumosa*, Madagascar, MABILLE, p. 726, Ann. Soc. ent. France lxxviii, n. sp.
- Pidorus leno*, Jaintia Hills, SWINHORE, p. 305, Ann. Nat. Hist. vi, n. sp.
- Pirga* Aur. referred to *Lymantriidae*, KARSCH, p. 351, Ent. Nachr. xxvi.
- P. weisei*, E. Africa, id., p. 352, t. c. n. sp.
- Platypteryx obtruncata*, Bahia, WARREN, p. 118, Nov. Zool. vii, n. sp.
- Ploneta* n. g. for *Diducta ploneta* n. sp., Java, pl. iv, fig. 9, p. 105, SNELLEN, larva, PIEPERS, pl. iii, figg. 7, 8, Tijdschr. Ent. xliii [name of species *Ploneta diducta*, cf. exp. of plate p. 108].
- Plotheia discigera* Walk. (as *Gadirtha*) figure, pl. ii, fig. 14, SWINHORE, Cat. Lep. Het. ii.
- Pacilocampa populi* varr., STICHEL, pp. 140-144, pl. ii, Berlin. ent. Zeitschr. xlv.
- Pacilonola* n. g., p. 47, for *Pisara seminigra* Hamps. and *Selca plagiola* Hamps., HAMPSON, Cat. Lep. Phal. ii.
- Polidule* n. g. for *Scoliacma xanthodelta* Luc., HAMPSON, p. 339, t. c.
- Poliosius* n. g., p. 106, type *Lithosia muricolor* Walk., with *P. marginata*, *pulverea*, Borneo, p. 107, *nigrifrons*, R. Niger, p. 109, pl. xx, fig. 24, n. spp., HAMPSON, t. c.
- Polypates nox*, Colombia, DRUCE, p. 510, Ann. Nat. Hist. v, n. sp.
- Porina cernivata* and *umbraculata*, life-history, QUAIL, pp. 411-419, Tr. ent. Soc. London 1900; *P. virescens*, larval tubercles, QUAIL, p. 8, Entomologist xxxiii.
- Portesia chrysorrhœa* varr., DEMAISON, p. 22, Bull. Soc. ent. France 1900.
- P. pulverea*, Christmas Is., HAMPSON, p. 69, pl. ix, fig. 9, Monogr. Christmas Island, n. sp.
- Prepiella* n. g., p. 356, type *Odozana hippona* Druce, with *P. miniola*, *strigivenia* n. spp., Amazona, p. 357, HAMPSON, Cat. Lep. Phal. ii.
- Procanthia* n. g. near *Teracotona*, for *P. argentea* n. sp., S. Africa, HAMPSON, p. 60, Ann. S. African Mus. ii.



- Procridia* n. g. for *Odozana metallica* Dogn., HAMPSON, p. 355, Cat. Lep. Phal. ii.
- Procrimina* n. g. for *Lithonia procris* Feld., HAMPSON, p. 223, t. c.
- Procris dolooides*, Ralum, PAGENSTECHER, p. 25, Zoologica xxix, n. sp.
- Pronola* n. g. *Lithosiina* type *P. magniplaga* Schaus, HAMPSON, p. 294, Cat. Lep. Phal. ii.
- Protosia* n. g., type *Apistosia terminalis* Walk., HAMPSON, p. 255, t. c.
- Proutia* n. g. characters; *P. anicanella* Br. = (*salicolella* auct.), CHAPMAN, pp. 35-38, Ent. Mag. xxxvi; *P. betulina*, *eppingella*, note on PROUT, CHAPMAN, p. xxiii, P. ent. Soc. London 1900.
- P. eppingella*, England, TUTT, Brit. Lep. ii, p. 295, n. sp.
- Pseualypia geronimo*, Arizona, BARNES, p. 44, Canad. Ent. xxxii, n. sp.
- Pseudypsia dilectata*, Ecuador, DOGNIN, p. 437, Ann. Soc. ent. Belgique xlv, n. sp.
- Pseudaphelia apollinaris*, larva, pupa, pl. xlvii, figg. 11-13, p. 305, FAWCETT, Tr. Zool. Soc. London xv.
- Psyche quadrangularis* varr. *nigrescens*, *albescens*, STAUDINGER, p. 356, Deutsche ent. Zeitschr. Lep. xii; *P. villosella*, note on, BOYD, p. 194, Ent. Mag. xxxvi.
- Psychida*: case formation, FABRE (386); Psychid from Timbuctoo, larva, case, eggs, parasite, VAYSSIÈRE & BORDAS, Ann. Fac. Marseille x, pp. 85-100, pl. i.
- Psychidea gracella*, note on, TUTT, p. 16, Ent. Rec. xii.
- Pteroma* n. g. *Notodontide*, for *P. eugenia* n. sp., Chinese Mongolia, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii.
- Pydna atrinittata*, Sikkim, HAMPSON, p. 41, pl. B, fig. 1, J. Bombay Soc. xiii, n. sp.
- Rebelia* n. g. for *Epichnopteryx* group 2, HEYLAERTS, p. 189, Ann. Soc. ent. Belgique xlv.
- Rhodographa* n. g. for *R. phaeoplaga* Schaus, HAMPSON, p. 295, Cat. Lep. Phal. ii.
- Ræselia micans*, Bolivia, pl. xix, fig. 28, p. 59, *leucostola*, Centr. Amer. fig. 32, p. 61, *causta*, Bolivia, pl. xx, fig. 1, p. 62, *flavibasis*, Ceylon, p. 63, fig. 3, *perangulata*, Bolivia, fig. 6, p. 64, *pygmaea*, Brazil, fig. 8, p. 65, *metaleuca*, Bolivia, fig. 28, p. 71, HAMPSON, t. c. n. spp.
- Sabalia fulleborni*, E. Africa, KARSCH, p. 354, Ent. Nachr. xxvi, n. sp.
- Sarrosa helotes*, Colombia, DRUCE, p. 507, Ann. Nat. Hist. v, n. sp.
- Sarrothripa coreana*, Corea, LEECH, p. 518, Tr. ent. Soc. London 1900, n. sp.
- Saturnia schencki* var. n. *galeropa*, pl. iv, fig. 1, PÜNGELER, p. 116, Deutsche ent. Zeitschr. Lep. xiii; *S. pyri*, distribution, ROCQUIGNY-ADANSON, Feuille Natural. xxx, pp. 140-144, and xxxi, pp. 18-24.
- Scaptosyle ivias*, Nias, *mirabilis*, Borneo, HAMPSON, p. 284, Cat. Lep. Phal. ii, n. spp.
- Scepsis fulvicollis*, early stages, DYAR, pp. 264-266, P. U. S. Mus. xxiii.
- Schistophleps fulvia*, Sumatra, HAMPSON, p. 528, pl. xxxiv, fig. 11, Cat. Lep. Phal. ii, n. sp.
- Sciathos arpi*, Rio Janeiro, SCHAUS, p. 230, J. N. York Ent. Soc. viii, n. sp.
- Scopelodes palpigera*, early stages, PIEPERS, p. 53, pl. i, figg. 2-4, Tijdschr. Ent. xliii.
- Secusio pulverata*, Natal, HAMPSON, p. 62, Ann. S. African Mus. ii, n. sp.
- Seirarcia clio* var. n. *jessica*, BARNES, p. 45, Canad. Ent. xxxii.
- Semyra marisa*, *phara*, Colombia, DRUCE, p. 513, Ann. Nat. Hist. v, n. spp.
- Setora nitens*, larva, PIEPERS, pp. 62-64, pl. i, figg. 8-11, Tijdschr. Ent. xliii.
- S. simplex*, Java, SNELLEN, p. 64, pl. iv, fig. 4, t. c. n. sp.
- Sibine fusca*, life-history, DYAR, pp. 517-526, pl. xiii, Ent. News Philad. xi.
- Siccia v-nigra*, China, pl. xxix, fig. 3, p. 393, *minima*, Ceylon, fig. 31,

- p. 394, *stigmatias*, Sangir, fig. 9, *seriata*, Assam, fig. 10, p. 395, *fulvocincta*, S. India, fig. 13, p. 397, HAMPSON, Cat. Lep. Phal. ii.
- Sidyra aurantiaca*, cf. *Tineida*, *Hyperperissa*.
- Simplicia*? *producta*, Colombia, DOGNIN, p. 438, Ann. Soc. ent. Belgique xliv, n. sp.
- Sisyrosea aroensis*, Venezuela, SCHAUS, p. 231, J. N. York ent. Soc. viii, n. sp.
- Sorana dryina*, Queensland, LOWER, p. 33, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Spatalia laticostalis*, N. India, HAMPSON, p. 43, pl. B, fig. 15, J. Bombay Soc. xiii, n. sp.
- Sphecosoma sparta*, Colombia, DRUCE, p. 507, Ann. Nat. Hist. v, n. sp.
- Spilosoma*, or *Hyphantria*, *cunea*, and allies, synonymy, LYMAN, pp. 121-129, Canad. Ent. xxxii: FYLES, t. c. pp. 193-199, pl. iv; *S. cunea*, synonymy, characters, FYLES, pp. 87-91, t. c.; *S. turbida* Butl., p. 49, pl. i, fig. 17, PAGENSTECHER, Zoologica xxix; *S. puella*, larva, pl. xlix, fig. 15, p. 315, FAWCETT, Tr. Zool. Soc. London xv.
- S. gracilis*, Dead Sea, STAUDINGER, pl. v, fig. 13, p. 354, Deutsche ent. Zeitschr. Lep. xii; *S. albicornis*, Ceylon, HAMPSON, p. 499, J. Bombay Soc. xiii: n. spp.
- Stauropus fagi*, mode of rearing, BAZETT, pp. 275-277, Eng. Mag. xxxvi.
- Stenarcha* n. g. for *Chiriphe stenopa* Meyr., HAMPSON, p. 264, Cat. Lep. Phal. ii.
- Stenaulis* n. g. for *Lithosia discalis* Walk., HAMPSON, p. 124, t. c.
- Stenophylloides encausta*, Simla, HAMPSON, p. 233, J. Bombay Soc. xiii, n. sp.
- Stenoscaptea* n. g. for *Mosoda venusta* Luc., HAMPSON, p. 280, Cat. Lep. Phal. ii.
- Stenosia* n. g. *Lithosiinae*, p. 92, for *S. rufecola*, n. sp., Bali, p. 93, HAMPSON, t. c.
- Stictane* n. g. *Lithosiinae* for *S. obliquilinea*, n. sp., Ceylon, p. 258, HAMPSON, t. c.
- Stictoria* n. g. for *Conchylis flexilisana* Walk., HAMPSON, p. 293, t. c.
- Striphnopterygidae*, composition, AURIVILLIUS, p. 1047, Ofv. Ak. Forh. lvii.
- Stygia darcetia*, Moab, GRUM-GRSHIMAILO, p. 469, Annuaire Mus. St. Petersb. iv, n. sp.
- Syntherata madagascariensis*, Madagascar, SONTTHONNAX, p. 6, Echange xvi, n. sp.
- Syntomimorpha* n. g. *Lithosiinae* for *S. caerulea*, n. sp., Celebes, HAMPSON, p. 254, Cat. Lep. Phal. ii.
- Syntomis phegea*, egg and oviposition, GILLMER, p. 251, Illustr. Zeitschr. Ent. v.
- S. burtti*, Pemba Is., DISTANT, p. 261, Entomologist xxxiii; *S. flaviguttata*, pl. B, fig. 2, *elongata*, India, HAMPSON, p. 50, J. Bombay Soc. xiii; *S. ochreopunctata*, Bismarck Arch., PAGENSTECHER, p. 24, Zoologica xxix; *S. cremnotherma*, Centr. Australia, LOWER, p. 29, P. Linn. Soc. N. S. Wales xxv: n. spp.
- Talara cinerea*, Colombia, pl. xxviii, fig. 4, p. 382, *phaella*, Panama, fig. 23, p. 384, HAMPSON, Cat. Lep. Phal. ii, n. spp.
- Taragama graberi*, larva, AURIVILLIUS, p. 1051, Ofv. Ak. Forh. lvii.
- Teara coralliphora*, N. S. Wales, LOWER, p. 32, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Teracotona euprepia*, Mashonaland, HAMPSON, p. 58, Ann. S. African Mus. ii, n. sp.
- Teratopora irregularis*, Queensland, HAMPSON, p. 271, Cat. Lep. Phal. ii, n. sp.
- Thallarcha fusa*, W. Australia, pl. xxxiii, fig. 26, p. 500, HAMPSON, t. c. n. sp.

- Thelosia meldola*, Parana, SCHAUS, p. 232, J. N. York Ent. Soc. viii, n. sp.  
*Thermecola* n. g. *Lithosiinae* for *T. tasmanica*, n. sp., Hobart, HAMPSON, p. 96, Cat. Lep. Phal. ii.  
*Thirmida venusta*, Ecuador, DOGNIN, p. 213, Ann. Soc. ent. Belgique xlv, n. sp.  
*Thliptocnemis* n. g. *Limacodidae* for *T. barbipes*, n. sp., Madagascar, MABILLE, p. 724, Ann. Soc. ent. France lxviii.  
*Thosea cervina*, varr., DUDGEON, pp. 259, 260, J. Bombay Soc. xiii; *T. divergens*, p. 66, *loesa*, pl. ii, figg. 1, 2, p. 69, larvæ, *bisura*, dimorphic ♀, p. 71, PIEPERS & SNELLEN, Tijdschr. Ent. xliii.  
*T. postornata*, India, China, p. 261, pl. ii, fig. 29, DUDGEON, J. Bombay Soc. xiii; *T. postornata*, Shanghai, HAMPSON, p. 231, J. Bombay Soc. xiii; *T. Auxa*, p. 68, pl. iv, fig. 5, *sythoffi*, p. 70, *mixta*, p. 71, Java, SNELLEN, Tijdschr. Ent. xliii: n. spp.  
*Threnosia* n. g. type *Tigrioides heminephes* Meyr., HAMPSON, p. 96, Cat. Lep. Phal. ii.  
*Thyone tineta*, Bolivia, pl. xxviii, fig. 5, HAMPSON, p. 348, t. c. n. sp.  
*Thyrgorina sikkimensis*, India, HAMPSON, p. 499, J. Bombay Soc. xiii, n. sp.  
*Tolyte glenwoodii*, Colorado, BARNES, p. 47, Canad. Ent. xxxii, n. sp.  
*Tortricidia fiskeana*, New Hampshire, DYAR, p. 333, Ent. News Philad. xi, n. sp.  
*Tortricosia* n. g. *Lithosiinae* for *T. excisa*, n. sp., Birma, HAMPSON, p. 291, Cat. Lep. Phal. ii.  
*Trichosoma hemigenum*, eggs, oviposition, KAMBEU, p. 45, Naturaliste xxii.  
*Trichocerosia* n. g. for *T. atrifulea*, n. sp., New Guinea, pl. xxxv, fig. 11, HAMPSON, p. 563, Cat. Lep. Phal. ii.  
*Trichogyia semifascia*, larva, PIEPERS, p. 104, Tijdschr. Ent. xliii.  
*Tricholepis xanthomelas*, Tenimber, HAMPSON, p. 424, Cat. Lep. Phal. ii, n. sp.  
*Triphysa phryne* var. n. *tscherskii*, GRUM-GRSHIMAILO, p. 461, Annuaire Mus. St. Petersb. iv.  
*Tropaea truncatipennis*, Mexico, SONTTHONNAX, cf. BARRETT, p. 403, Ent. News Philad. xi, n. sp.  
*Ubena* n. g. *Saturiniidae*, p. 357, for *U. fulleborniana*, n. sp., E. Africa, p. 358, KARSCH, Ent. Nachr. xxvi.  
*Urota sinope*, larva, pupa, pl. xlvii, figg. 9, 10, p. 305, FAWCETT, Tr. Zool. Soc. London xv.  
*Urozana* n. g. type *Odozana cordatula* Druce, HAMPSON, p. 378, Cat. Lep. Phal. ii.  
*Utriculifera macropлага*, Pulo Laut, HAMPSON, p. 290, t. c.; *U. aplaga*, Guinea, pl. xxxv, fig. 3, addenda, p. 561, HAMPSON, n. spp.  
*Whittleia* n. g. *Epichnopterygidae* type *reticella*, TUTT, p. 20, Ent. Rec. xii.  
*Xanthetis* n. g. type *Cyme luzonica* Feld., HAMPSON, p. 414, Cat. Lep. Phal. ii.  
*Xantholopha* n. g. for *X. purpurascens* Schaus, HAMPSON, p. 356, t. c.  
*Zanola narda*, p. 232, *tiliana*, p. 233, Parana, SCHAUS, J. N. York Ent. Soc. viii, n. spp.  
*Zeuzera postexcisa*, figure, SNELLEN, pl. iv, fig. 1, p. 41; *Z. coffea*, larva, native names, PIEPERS, pl. i, fig. 1, p. 42, Tijdschr. Ent. xliii.  
*Z. (Azygopheps) ariana*, Samarcand, GRUM-GRSHIMAILO, p. 468, Annuaire Mus. St. Petersb. iv; *Z. neuroxantha*, N. S. Wales, LOWER, p. 39, P. Linn. Soc. N. S. Wales: n. spp.  
*Zygæna*; of Normandy, *Z. hippocrepidis* Steph. nec Hb., DUPONT, pp. 47-78, Bull. Soc. Elbeuf xviii; *Z. (Anteris) ampla*, larva, cocoon, pl. xlix, figg. 27-29, p. 313, FAWCETT, Tr. Zool. Soc. London xv.  
*Z. escalerae*, Persia, POUJADE, p. 68, Bull. Mus. Paris 1900; *Z. rubricollis*, India, HAMPSON, p. 224, J. Bombay Soc. xiii: n. spp.

*Zyganoprocris* n. g. *Zyganidæ*, for *Z. chalcoclora*, n. sp., India, HAMPSON, p. 225, t. c.

*Zyganosia* n. n. for *Zyganopsis* Swinh. nec Feld., HAMPSON, p. 423, Cat. Lep. Phal. ii.

### NOCTUIDÆ (incl. CYMATOPHORIDÆ).

[Cf. BUCKLER (191), DODGE (338), DRUCE (348, 983), DYAR (354), FAWCETT (406), FRENCH (446), GROTE (537, 538), HAMPSON (547), HOLLAND (595), JOANNIS (662), LEECH (807), LOWER (828), LUCAS (832), MABILLE (843), MEYRICK (906), PAGENSTECHER (975), PETERSEN (993), PÜNGELER (1060), SCHULTZ (1165), SEMPER (1201), SMITH (1236-1240), STAUDINGER (1267-1270), STRECKER (1289), SWINHOE (1298, 1299).]

*Noctuidæ* from China and Japan, LEECH (807).

The types of N. American genera of *Noctuidæ*, GROTE, pp. 209-212, 225, 292, Canad. Ent. xxxii.

*Abriesa* n. g. *Hypeninae*, for *A. derna* n. sp., Queensland, SWINHOE, p. 312, Ann. Nat. Hist. vi.

*Acantholipes sordidula* Walk. as (*Chodda*), figure, pl. iv, fig. 26, SWINHOE, Cat. Lep. Het. ii.

*A. curvilica* (sic), China, LEECH, p. 560, Tr. ent. Soc. London 1900, n. sp.

*Acanthodica hages*, Colombia, DRUCE, p. 518, Ann. Nat. Hist. v, n. sp.

*Achea melicerie*, larva and pupa, SEMPER, p. 554, pl. s, figg. 1, 2, Schmetterl. Philipp. ii.

*Acontia*; the N. American revised, SMITH, pp. 47-84, Tr. Amer. ent. Soc. xxvi; *A. intersepta*, larva and pupa, pl. q, figg. 10, 11, SEMPER, Schmetterl. Philipp. ii.

*A. major*, p. 64, *ruicola*, p. 67, *lucasi*, p. 68, *quadriplaga*, p. 72, *schwarzii*, *arida*, p. 73, *coquilletii*, p. 74, *neocula*, p. 75, *behrii*, p. 76, *meskei*, p. 79, *libadia*, p. 80, N. America, SMITH, Tr. Amer. ent. Soc. xxvii, n. spp.

*Acontiola* n. g. near *Acontia*, for *A. sancta* n. sp., Syria, pl. v, fig. 4, STAUDINGER, p. 382, Deutsche ent. Zeitschr. Lep. xii.

*Acronycta*; synonymical results of an examination of N. American in the British Museum, SMITH, Canad. Ent. xxxii, pp. 333-336; *A. alni* var., FUCHS, p. 46, Jahrb. nassau. Ver. liii.

*A. nigricans*, China, LEECH, p. 104, Tr. ent. Soc. London 1900, n. sp.

*Adrapa ochracea*, *marginata*, p. 614, *A. ? rivulata*, *incertalis*, p. 615, *reticulatis*, p. 616, China, LEECH, t. c.; *A. albapicata*, *albibasalis*, p. 572, *scotosa*, *speculifera*, p. 573, Buru, HOLLAND, Nov. Zool. vii : n. spp.

*Ædia agropoides* Walk. (as *Cadesa*), pl. iv, fig. 17, *angulifera* Walk. (as *Anophia*), pl. ii, fig. 26, figures, SWINHOE, Cat. Lep. Het. ii; *Æ. acronyctoides*, larva, pl. s, fig. 12, *longinquua*, fig. 18, pl. lx, larva and pupa, pl. r, figg. 14, 15, SEMPER, Schmetterl. Philipp. ii.

*Æ. pruna*, Philippines, id. t. c. p. 552, pl. lx, fig. 17, n. sp.

*Agabra spotha*, Nilgiri Hills, SWINHOE, p. 37, pl. i, fig. 16, Cat. Lep. Het. ii, n. sp.

*Agonista fuscescens*, China, India, LEECH, p. 549, Tr. ent. Soc. London 1900; *A. morio*, Philippines, SEMPER, p. 547, Schmetterl. Philipp. ii : n. spp.

*Agrophila ludu* Druce, referred to *Tripudia*, SMITH, p. 489, P. U. S. Mus. xxii, n. sp.

*Agrotis*; varr. from Thian Schan, STAUDINGER, pp. 338-340, Deutsche ent. Zeitschr. Lep. xii; *A. glareosa* var. n. *limbata*, GOULD, n. sp. n. sp. fig. 4, Act. Soc. Bordeaux v; *A. chaldaica* var. *----*



- p. 289, Deutsche ent. Zeitschr. Lep. xii; *A. margaritacea* var., *plecta* var., FUCHS, p. 216, Jahrb. Nassau. Ver. liii; *A. janthina* var. n. *latimarginata*, RÖBER, p. 204, Ent. Nachr. xxvi; *A. hadgina* var.? *zeituna*, pl. vi, fig. 6, p. 361, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii; *A. C-nigrum, segetum*, distribution, SNELLEN, Tijdschr. Ent. xliii, p. 47, Verslag; *A. griseescens, flammatrix*, larvæ, WULLSCHLEGEL, p. 289, Mt. Schweiz. ent. Ges. x; *A. segetis*, larva, pl. xlix, fig. 16, p. 317, FAWCETT, Tr. Zool. Soc. London xv.
- A. clarivena*, pl. iv, fig. 8, p. 116, *gaurax*, fig. 9, p. 117, *coryphæa*, fig. 4, p. 118, Centr. Asia, PÜNGELER, Deutsche ent. Zeitschr. Lep. xiii; *A. globosa*, Taurus, pl. vi, fig. 5, p. 359, *sordescens*, Samarcand, *celebs*, fig. 4, Zeitun, p. 360, *homicida*, fig. 7, Amasia, *inumbata*, Zeitun, p. 363, *cuprina*, fig. 11, *æquicuspis*, fig. 18, p. 365, Centr. Asia, STAUDINGER, op. cit. xii; *A. agalma*, p. 289, pl. viii, fig. 7, *bonza*, fig. 13, *perigrapha*, fig. 10, p. 290, *submolesta*, fig. 14, *humigena*, pl. ix, fig. 1, *hemileuca*, pl. viii, fig. 6, p. 291, Centr. Asia, PÜNGELER, t. c.; *A. pudens*, E. Africa, MABILLE, p. 728, Ann. Soc. ent. France lxviii; *A. plana, exoleta*, p. 26, *oberthuri*, p. 30, China, *post-flava*, Japan, p. 31, *conjuncta*, p. 32, *A.? picturata, panda*, p. 33, China, LEECH, Tr. ent. Soc. London 1900; *A. saturnus*, Wisconsin, STRECKER, p. 31, Suppl. iii; *A. eremioides*, p. 257, *procellaris*, p. 258, Laysan Is., MEYRICK, Ent. Mag. xxxvi : n. spp.
- Alamisl binea*, Colombia, DRUCE, p. 520, Ann. Nat. Hist. v, n. sp.
- Alotsa* n. g. for part of *Eutelia*, SWINHOE, p. 87, Cat. Lep. Het. ii.
- Amyna pulvereæ*, China, LEECH, p. 114, Tr. ent. Soc. London 1900, n. sp.
- Anarta myrtilli* var., FUCHS, p. 48, Jahrb. Nassau. Ver. liii.
- A. lanuginosa, etacta*, Alaska, SMITH, p. 493, P. Washington Ac. ii, n. spp.
- Anepachetos* n. g. near *Doryodes*, for *A. bipartita* n. sp., Florida, SMITH, p. 482, P. U. S. Mus. xxii.
- Anigraea rubida*, figure, SWINHOE, pl. ii, fig. 16, Cat. Lep. Het. ii.
- Antiblemma minorata*, Florida, p. 492, *fasciata*, Arizona, p. 493, SMITH, P. U. S. Mus. xxii, n. spp.
- Anticarsia ferruginea*, Florida, SMITH, p. 174, J. N. York Ent. Soc. viii, n. sp.
- Anuga constricta*, early stages, SEMPER, p. 532, pl. R, figg. 1-3, Schmetterl. Philipp. ii.
- Anytus atristrigatus*, N. America, SMITH, p. 460, P. U. S. Mus. xxii; *A. obscurus*, Calgary, *profundus*, Manitoba, SMITH, p. 218, Canad. Ent. xxxii : n. spp.
- Apamea rubella* var. *rhusia*, PÜNGELER, pl. ix, fig. 11, p. 293, Deutsche ent. Zeitschr. Lep. xii.
- A. intermedia*, Japan, p. 60, *concinna, montana*, p. 61, *tripartita*, p. 62, *intermixta*, p. 63, *butleri*, p. 64, *fasciculata*, p. 65, *A.? clava*, p. 66, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Aplectoides obscura*, China, id. t. c. n. sp.
- Arbostola? viridis*, Colombia, DRUCE, p. 519, Ann. Nat. Hist. v, n. sp.
- Arcilasisa plagiata*, larva and pupa, SEMPER, pl. Q, figg. 6, 7, Schmetterl. Philipp. ii.
- Argiva æroa*, Gilolo, SWINHOE, p. 116, Cat. Lep. Het. ii, n. sp.
- Arsilonche colorada*, N. America, SMITH, p. 414, P. U. S. Mus. xxiii, n. sp.
- Atacira* n. g. for *Eutelia approximata* Walk., SWINHOE, p. 87, Cat. Lep. Het. ii.
- Attatha regalis*, larva and pupa, pl. T, figg. 3-5, p. 566, SEMPER, Schmetterl. Philipp. ii.
- Avitta guttulosa* Walk. (as *Oscia*), figure, SWINHOE, pl. iii, fig. 6, Cat. Lep. Het. ii.
- Batracharta cassoides* Walk. (as *Carissa*), figure, SWINHOE, pl. iii, fig. 10, t. c.

- Beara subrubra*, Bismarck Arch., PAGENSTECHER, pl. ii, fig. 35, p. 94, Zoologica xxix, n. sp.
- Bertula larusalis* Walk. (as *Isana*), pl. iv, fig. 11, *alpheusalis*, fig. 6, *eudoxusalis* Walk. (as *Bocana*), pl. iii, fig. 23, figures, SWINHÖE, Cat. Lep. Het. ii.
- Bessara quadratipennis*, figure, pl. iii, fig. 17, SWINHÖE, t. c.
- Blepharidia* n. g. for *Heliothobus lama* Püng. (below), *H. grumi* Alph., *Hadena dianthacina* Staud. and *Trigonophora grumi* Alph., PÜNGELER, p. 122, Deutsche ent. Zeitschr. Lep. xiii.
- Bleptina tenebrosa*, Madagascar?, MABILLE, p. 735, Ann. Soc. ent. France lxviii; *B. albovenata*, *proxima*, p. 619, *ambigua*, *tripartita*, p. 620, *curvilinea*, p. 621, *descripta*, *sinuosa*, p. 622, *propugnata*, p. 623, *nigristigma*, *venata*, p. 624, *rectilinea*, *contigua*, p. 625, *parallela*, p. 626, *albolinealis*, *B. vestitalis*, p. 627, China, LEECH, Tr. ent. Soc. London 1900; *B. flocculalis*, Bismarck Arch., PAGENSTECHER, p. 117, pl. ii, fig. 31, Zoologica xxix : n. spp.
- Bocana histaspesalis* Walk. (as *Bleptina*), figure, pl. iv, fig. 13, SWINHÖE, Cat. Lep. Het. ii.
- Bocula limbata* Butl., pl. ix, fig. 1, p. 66, HAMPSON, Monogr. Christmas Island.
- Bathantha guttulosa*, Borneo, SWINHÖE, p. 593, pl. iii, fig. 6, Cat. Lep. Het. ii, n. sp.
- Bomolocha jugalis* Walk. (as *Hypena*), figure, SWINHÖE, pl. iv, fig. 16, t. c.
- B. vega*, New Mexico, SMITH, p. 494, P. U. S. Mus. xxii, n. sp.
- Brevipecten consanguis*, p. 513, *apicalis*, p. 514, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Brontypena* n. g. for *eximia* Pag., HOLLAND, p. 576, Nov. Zool. vii.
- Bryomima* n. g. near *Bryophila*, for *B. carducha* n. sp., Mardin, pl. vi, fig. 9, STAUDINGER, p. 357, Deutsche ent. Zeitschr. Lep. xii.
- Bryophila mæonis* var. *sordida*, *rubellina*, STAUDINGER, p. 358, t. c.; *B. postochrea*, larva and pupa, pl. q, figs. 8, 9, p. 521, SEMPER, Schmetterl. Philipp. ii.
- B. griseata*, China, LEECH, p. 139, Tr. ent. Soc. London 1900; *B. exquisita*, Queensland, LUCAS, p. 150, P. Soc. Queensland xv : n. spp.
- Bryophilopsis tarachoides*, Madagascar, MABILLE, p. 729, Ann. Soc. ent. France lxviii, n. sp.
- Calamia deserticola*, Biskra, pl. v, fig. 10, p. 371, *modesta*, Jordan, p. 372, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii, n. spp.
- Callopietria floridensis*, larva, SWAINSON, p. 33, J. N. York Ent. Soc. viii.
- C. venata*, *albomacula*, China, LEECH, p. 111, Tr. ent. Soc. London 1900; *C. furunculoides*, Bismarck Arch., PAGENSTECHER, p. 74, Zoologica xxix : n. spp.
- Calogramma festiva*, larva, pl. q, figs. 4, 5, p. 516, SEMPER, Schmetterl. Philipp. ii.
- Callyna figurans*, pl. lx, fig. 4, *valliana*, fig. 5, SEMPER, t. c.
- Camptochilus bulteri*, Japan, LEECH, p. 647, Tr. ent. Soc. London 1900, n. sp.
- Capnodes punctivena*, early stages, DYAR, p. 274, P. U. S. Mus. xxiii.
- C. acrosema*, Madagascar, MABILLE, p. 734, Ann. Soc. ent. France lxviii; *C. umbrifera*, Buru, HOLLAND, p. 571, Nov. Zool. vii; *C. punctivena*, Florida, SMITH, p. 175, J. N. York Ent. Soc. viii; *C. ocina*, p. 520, *albiopunctata*, p. 521, Colombia, DRUCE, Ann. Nat. Hist. v : n. spp.
- Capotena scripta* Walk. (as *Arbasera*), figure, SWINHÖE, pl. iii, fig. 11, Cat. Lep. Het. ii.
- Caradrina defixa* Walk. (as *Barbesola*), pl. i, fig. 1, SWINHÖE, t. c.
- C. casearia*, Jordan, STAUDINGER, pl. v, fig. 1, p. 375, Deutsche ent. Zeitschr. Lep. xii; *C. chinensis*, p. 117, *fusca*, p. 118, China, *fuliginosa*, Japan, *radiata*, p. 120, *C. secunda*, p. 121, China, LEECH, Tr. ent.

- Soc. London 1900; *C. peltaloma*, N. S. Wales, LOWER, p. 32, P. Linn. Soc. N. S. Wales xxv; *C. insipida*, Wisconsin, STRECKER, p. 32, Suppl. iii; *C. leucorena*, California, SMITH, p. 477, P. U. S. Mus. xxii: n. spp.
- Carea? variegata*, China, LEECH, p. 524, Tr. ent. Soc. London 1900, n. sp.
- Carneades pugionis*, p. 419, *nevada*, p. 420, *contagionis*, p. 421, *loya*, *flaviscapula*, p. 422, *excogita*, p. 423, *exculpta*, *navulus*, p. 424, *megastigma*, *stigmatalis*, p. 425, *termessus*, p. 426, *enteridis*, p. 427, *atropulverea*, p. 428, *compressipennis*, *falerina*, p. 429, *vallus*, p. 430, *sessile*, p. 431, *relaxus*, p. 432, *luteositus*, *tocoyae*, p. 433, *incubita*, p. 435, *terrenus*, *territoralis*, p. 436, *fulda*, p. 437, *itodes*, p. 438, *lagganæ*, p. 439, *ontario*, *testula*, p. 440, *difformis*, p. 441, *dakota*, p. 442, *holoberba*, *kerrvillei*, p. 443, *ternarius*, p. 444, *noctuiiformis*, p. 445, *intrusa*, *neotelis*, p. 446, *atrofusca*, p. 447, *objurgata*, p. 448, *cariosus*, p. 449, *malis*, p. 450, *pindar*, p. 451, *henrietta*, p. 452, *vanidicus*, p. 453, *faminalis*, p. 454, *nordica*, p. 455, *factoris*, p. 456, *cæsius*, p. 457, *acutifrons*, p. 458, *selenis*, p. 459, *laminis*, p. 460, N. America, SMITH, P. U. S. Mus. xxii, n. spp.
- Catada charalis*, Queensland, SWINHÖE, p. 311, Ann. Nat. Hist. vi, n. sp.
- Catocala*: notes on N. American, FRENCH, pp. 188–191, Canad. Ent. xxxii; *C. nupta*, abundance in England in 1900, habits, LUCAS, NASH, Entomologist xxxiii, p. 271.
- C. abacta*, Asia Minor, STAUDINGER, p. 113, Deutsche ent. Zeitschr. Lep. xiii; *C. invasa*, p. 531, *hampsoni*, p. 532, *butleri*, p. 534, *columbina*, p. 535, China, LEECH, Tr. ent. Soc. London 1900; *C. barnesi*, Texas, FRENCH, p. 190, Canad. Ent. xxxii; *C. moderna*, Texas, GROTE, p. 191, t. c.; *C. titania*, Louisiana, DODGE, p. 472, Ent. News Philad. xi: n. spp.
- Cauninda archesia*, larva, pl. t, fig. 1, p. 564, SEMPER, Schmettlerl. Philipp. ii.
- Cerastis intricata*, characters and synonymy, OBERTHUR, pp. 352–355, Bull. Soc. ent. France 1900.
- Cerocala munda*, Somaliland, DRUCE, p. 19, pl. i, fig. 3, P. Zool. Soc. London 1900, n. sp.
- Cerynea diversalis* Walk. (as *Bertula*), figure, SWINHÖE, p. 68, Cat. Lep. Het. ii.
- Chaladra cuculloides*, figure, pl. iii, fig. 2, SWINHÖE, t. c.
- Chamyla* n. g., position doubtful, for *C. idia* n. sp., pl. vii, fig. 9, Thian Schan, STAUDINGER, p. 343, Deutsche ent. Zeitschr. Lep. xii.
- Chloantha? conjuncta*, Centr. Asia, PÜNGELER, pl. ix, fig. 15, p. 294, t. c. n. sp.
- Chorsia maculosa* Walk., figure, pl. viii, fig. 23, SWINHÖE, Cat. Lep. Het. ii.
- Chytolita morbidalis*, early stages, DYAR, p. 278, P. U. S. Mus. xxiii.
- Chytonix semifascia*, Colorado, SMITH, p. 415, t. c. n. sp.
- Cleophana vanlogeri*, Biskra, STAUDINGER, pl. v, fig. 9, p. 378, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Celophoris* n. g. *Gonopterinae*, for *C. trilineata* n. sp., Africa or Madagascar, MABILLE, p. 733, Ann. Soc. ent. France lxxviii.
- Conacontia* n. g., p. 49, for *C. flavicosta* n. sp., New Mexico, p. 58, and *Tarache angustipennis* Grote, SMITH, p. 59, Tr. Amer. ent. Soc. xxvii.
- Copibryophila* n. g., *Bryophilides*, for *C. angelica* n. sp., California, p. 416, SMITH, P. U. S. Mus. xxii.
- Corgatha quadricostaria* Walk. (as *Hyria?*), figure, note, *C. implexata* Walk. (as *Palara*), pl. i, fig. 26, *C. æqua* Walk. (as *Ausina?*), pl. ii, fig. 18, *C. albicinctalis* Walk. (as *Zitna*), fig. 13, figures, SWINHÖE, p. 69, Cat. Lep. Het. ii.
- Corgatha tana*, N. China, SWINHÖE, p. 69, pl. ii, fig. 9, t. c. n. sp.
- C. fasciola*, Japan, LEECH, p. 512, Tr. ent. Soc. London 1900, n. sp.

- Cosmia notabilis* Walk. (as *Dorippa*), figure, pl. i, fig. 13, SWINHÖE, Cat. Lep. Het. ii.
- C. punctirena*, N. America, SMITH, p. 222, Canad. Ent. xxxii, n. sp.
- Cosmophila vitiensis*, pl. ix, fig. 12, p. 67, HAMPSON, Monogr. Christmas Island.
- Craniophora obscura*, China, LEECH, p. 107, Tr. ent. Soc. London 1900, n. sp.
- Criothote? prominens*, China, LEECH, p. 572, t. c. n. sp.
- Cucullia duplicata* var. *amæna*, pl. vi, fig. 17, p. 379, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii; *C. argentina* var. n. *achalina*, PÜNGELER, p. 120, op. cit. xiii.
- C. grisescens*, China, LEECH, p. 99, Tr. ent. Soc. London 1900, n. sp.
- Cymatophora* n. sp., see *Geometridæ*.
- Dahlia* n. g. near *Helia*, for *D. hesperioides* n. sp., Bismarck Arch., PAGENSTECHER, p. 120, pl. i, fig. 13, Zoologica xxix.
- Dasycompa staudingeri*, characters and varr., OBERTHUR, p. 355, Bull. Soc. ent. France 1900.
- Daxata trisignata*, Madagascar, MABILLE, p. 734, Ann. Soc. ent. France lxxviii, n. sp.
- Desana* n. g. for *Plusia peninsulata* Walk., SWINHÖE, p. 26, pl. i, fig. 12, Cat. Lep. Het. ii.
- Diallagma* n. g. *Eucalypterides*, for *D. lutea* n. sp., Florida, SMITH, p. 483, P. U. S. Mus. xxii.
- Didigua seticornis* Walk. (as *Nonagria*), figure, SWINHÖE, pl. iii, fig. 21, Cat. Lep. Het. ii.
- Diomea orbifera* Walk. (as *Zigera*), pl. iii, fig. 22, *absorbens* Walk. (as *Corsa*), fig. 14, figures, SWINHÖE, t. c.
- Diphthera marmorea*, p. 136, *vivida*, p. 137, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Drasteria conspicua*, Canada, SMITH, p. 224, Canad. Ent. xxxii, n. sp.
- Dyrzela poaphiloides* Walk. (as *Thermesia*), figure, pl. i, fig. 7, SWINHÖE, Cat. Lep. Het. ii.
- Egnasia minereusalis*, pl. iv, fig. 5, *celenoalis*, fig. 21, figures, SWINHÖE, t. c.
- E. macularia*, Mauritius, MABILLE, p. 734, Ann. Soc. ent. France lxxviii;
- E. manleyi*, Japan, LEECH, p. 609, Tr. ent. Soc. London 1900 : n. spp.
- Egyrion* n. g. near *Trama*, p. 176, for *E. flaria* n. sp., Florida, p. 177, SMITH, J. N. York Ent. Soc. viii.
- Eleale plusioides*, figure, pl. ii, fig. 24, SWINHÖE, Cat. Lep. Het. ii.
- Elyra phlegeusalis*, pl. iii, fig. 15, *E. tespisalis* Walk. (as *Neviasca*), pl. iv, fig. 12, figures, SWINHÖE, t. c.
- Entomogramma bendoides* Walk. (as *Remigia*), pl. iii, fig. 8, *decernens* Walk. (as *Toxocampa*), fig. 19, figures, SWINHÖE, t. c.
- E. radiata*, Bismarck Arch., PAGENSTECHER, p. 108, Zoologica xxix, n. sp.
- Epizeuxis? nigellus*, Illinois, STRECKER, p. 36, Suppl. iii, n. sp.
- Erastria fasciana*, variation, *stygia* Butl. and *distinguenda* Staud. are synonyms of *fasciana*, LEECH, p. 140, Tr. ent. Soc. London 1900.
- E. quadrimacula*, S. Africa or Malay?, *acrochiona*, S. Africa, MABILLE, p. 729, Ann. Soc. ent. France lxxviii; *E. nivata*, p. 141, *confusa*, p. 143, *E.? mandarina*, p. 145, China, LEECH, Tr. ent. Soc. London 1900; *E. griseomixta*, Christmas Is., HAMPSON, p. 68, pl. ix, fig. 5, Monogr. Christmas Island; *E. verecunda*, Bismarck Arch., PAGENSTECHER, p. 79, Zoologica xxix; *E. strigularia*, Florida, SMITH, p. 173, J. N. York Ent. Soc. viii : n. spp.
- Ercheia dubia*, pl. ix, fig. 13, SEMPER, Schmetterl. Philipp. ii.
- Eublemma roseonivea* Walk. (as *Acontia*), pl. i, fig. 11, *E. intractata* Walk. (as *Capnodes*), fig. 23, figures, SWINHÖE, Cat. Lep. Het. ii; *E.*, spp. feeding on *Coccida*, GREEN, p. 538, J. Bombay Soc. xiii; *E. amabilis*, larval habits, DUDGEON, p. 379, t. c.

- E. lurida*, Bismarck Arch., PAGENSTECHER, p. 84, pl. ii, fig. 43, Zoologica xxix, n. sp.
- Eulepa niveigutta*, figure, pl. i, fig. 21, SWINHOE, Cat. Lep. Het. ii.
- Euplexia albomaculata*, pl. ix, fig. 2, SEMPER, Schmetterl. Philipp. ii.
- E. ochrargyrea*, Madagascar, MABILLE, p. 727, Ann. Soc. ent. France lxviii ; *E. brunnea*, p. 83, *olivacea*, p. 84, China, LEECH, Tr. ent. Soc. London 1900 ; *E. spilophanes*, Tasmania, SWINHOE, p. 21, pl. i, fig. 6, Cat. Lep. Het. ii : n. spp.
- Eurois pryori*, Japan, *munda*, p. 92, *hampsoni*, p. 93, *fulminea*, p. 94, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Eutelia vulgaris*, p. 731, *gilvicolor*, p. 732, E. Africa, MABILLE, Ann. Soc. ent. France lxviii ; *E. scelerata*, Buru, HOLLAND, p. 564, Nov. Zool. vii : n. spp.
- Fagitana obliqua*, Florida, SMITH, p. 174, J. N. York Ent. Soc. viii, n. sp.
- Felinia nigripalpis* Walk. (as *Toxocampa*), figure, pl. iii, fig. 12, SWINHOE, Cat. Lep. Het. ii.
- Flammona quadrifasciata* Walk., figure, pl. i, fig. 24, SWINHOE, t. c.
- F. trilineata*, China, LEECH, p. 562, Tr. ent. Soc. London 1900, n. sp.
- Fodina cuneigeru*, larva, p. 566, pl. t, fig. 66, SEMPER, Schmetterl. Philipp. ii.
- Fruva apicella*, larva, SWAINSON, p. 33, J. N. York Ent. Soc. viii.
- Gadirtha pulchra*, pl. ix, fig. 7, SEMPER, Schmetterl. Philipp. ii.
- G. exacta*, Philippines, SEMPER, p. 527, pl. ix, fig. 6, t. c. n. sp.
- Gariga argentilinea* Walk., figure, pl. viii, fig. 15, SWINHOE, Cat. Lep. Het. ii.
- Gaurena gemella*, China, LEECH, p. 13, Tr. ent. Soc. London 1900, n. sp.
- Gespannia* n. g. for *Ginea pectoralis* Walk., SWINHOE, p. 162, Cat. Lep. Het. ii.
- Glottula dominica*, early stages, SEMPER, Schmetterl. Philipp. ii, pl. f, figg. 12-14 ; *G. pancrati*, larva, pl. xlix, figg. 17, 18, p. 317, FAWCETT, Tr. Zool. Soc. London xv.
- Goniis editrix*, larva, SWAINSON, p. 33, J. N. York Ent. Soc. viii.
- Gonodonta unica*, early stages, DYAR, p. 272, P. U. S. Mus. xxiii.
- Gortyna* and allies, historical synonymy, GROTE (537) ; *G. erepta*, noticed, GROTE, p. 107, Canad. Ent. xxxii.
- Gracilipalpus sublimbatus*, Centr. Asia, PÜNGELER, pl. ix, fig. 13, p. 294, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Grammodes cæca*, Bismarck Arch., PAGENSTECHER, p. 108, pl. i, fig. 12, Zoologica xxix ; *G. coona*, Queensland, SWINHOE, p. 156, Cat. Lep. Het. ii : n. spp.
- Graphiphora clava*, p. 38, *pallidula*, p. 39, *flavibrunnea*, p. 40, *tincta destituta*, p. 41, *mandarina*, p. 42, *nebula*, p. 43, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Gyrtona erebenna*, Madagascar, MABILLE, p. 731, Ann. Soc. ent. France lxviii, n. sp.
- Hadena culta* var. n. *subviolacea*, LEECH, p. 55, Tr. ent. Soc. London 1900 ; *H. illoba* Butl.=(*Mamestra declinans* Staud.), LEECH, p. 56, t. c. ; *H. subornata*, p. 342, pl. vii, fig. 11, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii ; *H. secalis*, *strigilis*, larval habits, REUTER, pp. 23-32, Acta Soc. Faun. Fenn. xix, No. 1 ; *H. ochroleuca*, hermaphrodites, SCHULTZ, p. 303, pl. vii, fig. 7, Deutsche ent. Zeitschr. Lep. xii.
- H. remota*, Centr. Asia, PÜNGELER, pl. ix, fig. 19, p. 294, t. c. ; *H. ? lama*, Centr. Asia, STAUDINGER, pl. vi, fig. 16, p. 370, t. c. ; *H. tenera*, Alaska, SMITH, p. 491, P. Washington Ac. ii ; *H. una*, Wisconsin, STRECKER, p. 32, Suppl. iii ; *H. cerivana*, Calgary, SMITH, p. 220, Canad. Ent. xxxii ; *H. tapeta*, p. 467, *luteocinerea*, p. 468, *mustelina*, p. 469, *jocasta*, *tela*, p. 470, N. America, SMITH, P. U. S. Mus. xxii : n. spp.



- Hecatera confusa*, China, LEECH, p. 96, Tr. ent. Soc. London 1900, n. sp.  
*Heliodes angelica*, p. 484, *restrictalis*, p. 485, California, SMITH, P. U. S. Mus. xxii, n. spp.  
*Heliophobus lama*, Centr. Asia, PÜNGELER, p. 293, pl. ix, fig. 8, Deutsche ent. Zeitschr. Lep. xii, n. sp.  
*Heliothis separata* Walk., pl. lx, fig. 1, SEMPER, Schmetterl. Philipp. ii.  
*H. copiosa*, p. 23, *H. ? straminea*, p. 24, China, LEECH, Tr. ent. Soc. London 1900, n. sp.  
*Herchunda* n. g. for *Premusa hirtissima* Walk., SWINHÖE, p. 592, Cat. Lep. Het. ii.  
*Hermينيا iridescens*, p. 151, *dormiens*, p. 152, Queensland, LUCAS, P. Soc. Queensland xv, n. spp.  
*Himella quadristigma*, Arizona, SMITH, p. 480, P. U. S. Mus. xxii, n. sp.  
*Homoptera duplicilinea* Walk. (as *Hadena*), figure, SWINHÖE, pl. ii, fig. 17, Cat. Lep. Het. ii.  
*H. ? fasciata*, China, LEECH, p. 553, Tr. ent. Soc. London 1900, n. sp.  
*Homohadena candida*, Texas, SMITH, p. 478, P. U. S. Mus. xxii, n. sp.  
*Hyblaea puera*, early stages, SEMPER, p. 529, pl. q, figg. 15-17, Schmetterl. Philipp. ii. *Hyblaea*, see also *Bombyces*.  
*H. aterrima*, Buru, HOLLAND, p. 563, Nov. Zool. vii, n. sp.  
*Hydrillodes verillifera*, Christmas Is., HAMPSON, p. 68, pl. ix, fig. 6, Monogr. Christmas Island, n. sp.  
*Hydræcia*, life-histories of N. American, BIRD, pp. 226-234 and 276-283, Canad. Ent. xxxii; *H.*, oviposition, BIRD, p. 209, J. N. York Ent. Soc. viii; *H. stramentosa*, notes on, MOFFAT, pp. 61-63, pl. ii, Canad. Ent. xxxii and GROTE, p. 119, t. c.; MOFFAT, p. 133, t. c.  
*Hyloopsis magna*, China, LEECH, p. 146, Tr. ent. Soc. London 1900, n. sp.  
*Hypætra includens*, larva and pupa, pl. s, figg. 14, 15, SEMPER, Schmetterl. Philipp. ii.  
*Hypena rhombalis* varr. n. *perspicua*, *obscura*, p. 657, LEECH, Tr. ent. Soc. London 1900; *H. obditalis*, larva, SWAINSON, p. 34, J. N. York Ent. Soc. viii.  
*Hypena albistriga*, E. Africa, MABILLE, p. 736, Ann. Soc. ent. France lxxviii; *H. incisa*, p. 655, *mandarina*, p. 658, *insolita*, p. 659, *confusa*, *inambitiosa*, p. 660, China, *H. ? bipartita*, Japan, *pectinata*, p. 661, *simplex*, p. 662, China, LEECH, Tr. ent. Soc. London 1900 : n. spp.  
*Hypocaula holcona*, pl. lx, fig. 14, *violacea*, fig. 15, SEMPER, Schmetterl. Philipp. ii.  
*Ilurgia subsignata*, Madagascar, MABILLE, p. 735, Ann. Soc. ent. France lxxviii, n. sp.  
*Ingura tripartita*, Philippines, SEMPER, p. 532, pl. lx, fig. 8, and larva, pl. r, fig. 4, Schmetterl. Philipp. ii, n. sp.  
*Kakopoda* n. g. *Erebiinae*, p. 175, for *K. cincta* n. sp., Florida, p. 176, SMITH, J. N. York Ent. Soc. viii.  
*Lacera alope*, larva, pl. r, fig. 18, SEMPER, Schmetterl. Philipp. ii.  
*Libiosa* Walk., valid, SWINHÖE, p. 198, Cat. Lep. Het. ii.  
*Lineopalpa scitipennis* Walk. (as *Cosmophila*), figure, SWINHÖE, pl. iii, fig. 18, t. c.; *L. fulvida*, larva and pupa, SEMPER, p. 537, pl. i, figg. 7, 8, Schmetterl. Philipp. ii.  
*Lophoptera albicans*, pl. ii, fig. 40, *mediopunctata*, *angusta*, Bismarck Arch., PAGENSTECHER, p. 92, Zoologica xxix, n. sp.  
*Leucania comma* var. n. *rhodocomma*, PÜNGELER, p. 120, Deutsche ent. Zeitschr. Lep. xiii.  
*L. mesotrosta*, Centr. Asia, PÜNGELER, pl. ix, fig. 9, p. 295, op. cit. xii; *L. opaca*, Centr. Asia, STAUDINGER, pl. vi, fig. 13, p. 374, t. c.; *L. proxima*, *nepos*, China, p. 100, *striata*, Japan, Looschoo, p. 127, *ferrilinea*, China, *pryeri*, Japan, p. 128, LEECH, Tr. ent. Soc. London 1900; *L. semicana*, Bismarck Arch. p. ii.

- fig. 37, *Zoologica* xxix; *L. stenographa*, S. Australia, LOWER, p. 30, P. Linn. Soc. N. S. Wales xxv; *L. sepulchralis*, Queensland, LUCAS, p. 149, P. Soc. Queensland xv; *L. velutina*, Florida, SMITH, p. 480, P. U. S. Mus. xxii: n. spp.
- Lynecestis amphix*, larva, SEMPER, p. 551, pl. R, fig. 11, Schmetterl. Philipp. ii.
- Lysimelia phineusalis*, pl. iv, fig. 14, *nothusalis*, fig. 15, *silvialis*, fig. 23, figures, SWINHOE, Cat. Lep. Het. ii.
- Macaldenia palumba*, larva and pupa, pl. s, figg. 3, 4, SEMPER, Schmetterl. Philipp. ii.
- Maliatha vialis* Moore (as *Acontia*), figure, pl. i, fig. 9, SWINHOE, Cat. Lep. Het. ii.
- Mamestra lauta*, Centr. Asia, PÜNGELER, p. 119, Deutsche ent. Zeitschr. Lep. xiii; *M. bryoptera*, pl. ix, fig. 6, *decreta*, fig. 7, Centr. Asia, PÜNGELER, p. 292, op. cit. xii; *M. eversmanni*, pl. vi, fig. 14, p. 367, *schneideri*, p. 368, Centr. Asia, STAUDINGER, t. c.; *M. negussa*, Calgary, SMITH, p. 219, Canad. Ent. xxxii; *M. tacoma*, Washington, STRECKER, p. 31, Suppl. iii; *M. senatoria*, p. 461, *rainierii*, p. 462, *bolteri*, p. 463, *yakima*, *dilatata*, p. 464, *florida*, p. 465, *roscofuffusa*, p. 466, *griscata*, p. 467, N. America, SMITH, P. U. S. Mus. xxii: n. spp.
- Marapana ilatana*, Buru, HOLLAND, p. 576, Nov. Zool. vii, n. sp.
- Mastigophorus ochrestigma*, *modesta*, *butleri*, p. 629, *nigristigmata*, p. 630, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Maxilua frontalis* Walk., figure, pl. ii, fig. 8, SWINHOE, Cat. Lep. Het. ii.
- Mecodina duplicata*, p. 592, *lankesteri*, *externa*, p. 593, *costimacula*, *ambigua*, p. 594, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Meliopsis ankara*, Quetta, SWINHOE, p. 311, Ann. Nat. Hist. vi; *M. argos*, Colombia, DRUCE, p. 520, Ann. Nat. Hist. v: n. spp.
- Mesoptectra hamptoni*, China, LEECH, p. 618, Tr. ent. Soc. London 1900, n. sp.
- Metachrostis megalena*, S. Africa, MABILLE, p. 730, Ann. Soc. ent. France 1900; *M. chinensis*, p. 156, *brunnea*, p. 157, China, LEECH, Tr. ent. Soc. London 1900: n. spp.
- Metaptila? ptilomela*, Melbourne, LOWER, p. 31, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Metatypa sericina?*, Madagascar, MABILLE, p. 730, Ann. Soc. ent. France lxviii, n. sp.
- Metopta* n. g. for *Spiramia rectifasciata* Méb., SWINHOE, p. 170, Cat. Lep. Het. ii.
- Micardia munda*, China, LEECH, p. 148, Tr. ent. Soc. London 1900, n. sp.
- Micraschus leptinia?*, Madagascar, MABILLE, p. 731, Ann. Soc. ent. France lxviii, n. sp.
- Mixtila* n. n. for *Pinacia* Walk., SWINHOE, p. 193, Cat. Lep. Het. ii.
- Moma gracilis*, India, SWINHOE, p. 101, pl. iii, fig. 1, t. c. n. sp.
- Murgisia orgyoides*, figure, pl. iv, fig. 7, SWINHOE, t. c.
- Mythimna grandis* var. n. *curcata*, LEECH, p. 130, Tr. ent. Soc. London 1900.
- Nornia typica* var. n. *issyca*, PÜNGELER, p. 119, Deutsche ent. Zeitschr. xiii.
- Naharra contracta*, figure, pl. iii, fig. 16, SWINHOE, Cat. Lep. Het. ii.
- Naranga cyclina*, p. 730, *nepholea*, *leptinia*, p. 731, Africa or Madagascar, MABILLE, Ann. Soc. ent. France lxviii, n. spp.
- Narthecophora* n. g. near *Acopa*, p. 485, for *N. pulverea* n. sp., Arizona, p. 486, SMITH, P. U. S. Mus. xxii.
- Nebriassa bimacula* Walk., figure, pl. i, fig. 22, SWINHOE, Cat. Lep. Het. ii.
- Nephelodes pectinatus*, British Columbia, SMITH, p. 221, Canad. Ent. xxxii, n. sp.
- Neostictoptera* n. g. for *N. nigropuncta* n. sp., Colombia, DRUCE, p. 519, Ann. Nat. Hist. v.

- Nodaria turpalis*?, Madagascar, MABILLE, p. 735, Ann. Soc. ent. France lxviii; *N. tacta*, p. 574, *clathrata*, *rugosa*, p. 575, Buru, HOLLAND, Nov. Zool. vii; *N. annulata*, p. 632, *germana*, *angulina*, p. 633, *incerta*, *triplex*, p. 634, *centralis*, p. 637, *vermiculata*, p. 639, *paupercula*, *nigrisigma*, p. 640, *sinensis*, p. 641, *subnubila*, p. 642, *N.?* *alpherakyi*, *sordida*, p. 643, *punctilinea*, *angulata*, *mandarina*, p. 644, var. n. *pallens*, p. 645, China, LEECH, Tr. ent. Soc. London 1900; *N. porphyrialis*, Bismarck Arch., PAGENSTECHER, p. 119, Zoologica xxix : n. spp.
- Nyctipao pilosa*, China, LEECH, p. 548, Tr. ent. Soc. London 1900; *N. variegata*, Queensland, SWINHOE, p. 114, Cat. Lep. Het. ii : n. spp.
- Ochropleura subpurpurea*, p. 35, *mandarina*, p. 36, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Ommatostola popofensis*, Alaska, SMITH, p. 492, P. Washington Ac. ii, n. sp.
- Oncocnemis ciliata*, Colorado, SMITH, p. 478, P. U. S. Mus. xxii, n. sp.
- Ophideres jordani*, Buru, HOLLAND, p. 570, Nov. Zool. vii, n. sp.
- Ophiura torrida*, pl. 8, figg. 5-7, p. 558, *simillima*, figg. 8, 9, early stages, SEMPER, Schmetterl. Philipp. ii.
- O. swinhoei*, Philippines, SEMPER, p. 557, t. c.; *O. redunca*, Brisbane, SWINHOE, p. 141, cat. Cat. Lep. Het. ii : n. spp.
- Orrhodia torrida*, larva, WULLSCHLEGEL, p. 289, Mt. Schweiz. ent. Ges. x.
- Orthodes calceolarius*, Long Is., STRECKER, p. 33, Suppl. iii, n. sp.
- Orthogoniu sera*, variation, var. n. *grisea*, *plana*, LEECH, p. 50, Tr. ent. Soc. London 1900.
- Orthosia litura* var. n. *saturata*, SCHULTZ, p. 349, Illustr. Zeitschr. Ent. v; cf. TUTT, t. c. p. 383.
- O. jordana*, Jordan, STAUDINGER, pl. v, fig. 12, p. 376, Deutsche ent. Zeitschr. Lep. xii; *O. placata*, *conspicua*, p. 79, China, LEECH, Tr. ent. Soc. London 1900; *O. typhlopa*, S. Australia, LOWER, p. 30, P. Linn. Soc. N. S. Wales xxv : n. spp.
- Oriopla iarbaspalis*, figure, pl. iii, fig. 4, SWINHOE, Cat. Lep. Het. ii.
- Oruza nigropunctata*, Bismarck Arch., PAGENSTECHER, p. 86, Zoologica xxix, n. sp.
- Oreanenus* n. g., p. 201, for part of *Mustigophorus*, with *O. kalialis* n. sp., Borneo, p. 202, SWINHOE, Cat. Lep. Het. ii.
- Oxyodes* (subg. n. *Rectipalpula*) for *O. billeti* n. sp., Tonkin, JOANNIS, p. 280, Bull. Soc. ent. France 1900.
- Oxythres* n. g. for *O. splendens* n. sp., Colombia, DRUCE, p. 517, Ann. Nat. Hist. v.
- Palada* n. g. *Heliothides*, p. 486, for *P. scarletina* n. sp., California, p. 487, SMITH, P. U. S. Mus. xxii.
- Palindia nicea*, *primulina*, Colombia, DRUCE, p. 518, Ann. Nat. Hist. v, n. spp.
- Palimpsestes brevis*, *brunnea*, China, LEECH, p. 18, Tr. ent. Soc. London 1900, n. spp.
- Palpangula?* *simiola*, Centr. Asia, PÜNGELER, pl. ix, fig. 12, p. 295, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Panilla costipunctata*, Japan, China, LEECH, p. 550, Tr. ent. Soc. London 1900, n. sp.
- Parora* n. g. *Erebiides*?, for *P. texana* n. sp., Texas, SMITH, p. 491, P. U. S. Mus. xxii.
- Penicillaria jocosatrix*, larva and pupa, pl. 8, figg. 5, 6, *maculata*, larva, fig. 7, SEMPER, Schmetterl. Philipp. ii.
- P. vittalba*, Celebes, SEMPER, t. c. p. 534, pl. ix, fig. 9, n. sp.
- Peridroma incisus*, early stages, DYAR, p. 273, P. U. S. Mus. xxiii.
- Perigea lucetta*, p. 474, *cervina*, p. 475, *texana*, p. 476, *consors*, p. 477, N. America, SMITH, t. c. n. spp.



- Phlogophora subpurpurea*, p. 71, *fuscmarginata*, p. 72, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Phaëbophilus turpis*, Thian Schan, STAUDINGER, pl. vii, fig. 8, p. 341, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Phyllodes punctifascia, dentilinea*, China, LEECH, p. 576, Tr. ent. Soc. London 1900, n. spp.
- Plecoptera nebulilinea* Walk. (as *Carteia*), SWINHOE, p. 150, Cat. Lep. Het. ii.
- P. antigona*, Buru, HOLLAND, p. 567, Nov. Zool. vii, n. sp.
- Plotheia cellis*, early stages, SEMPER, p. 529, pl. q, figg. 12-14, Schmetterl. Philipp. ii.
- Plumipalpa simplex*, China, LEECH, p. 646, Tr. ent. Soc. London 1900, n. sp.
- Plusia triplasia* var. *clarissa*, STAUDINGER, p. 381, Deutsche ent. Zeitschr. Lep. xii; *P. festuca* var., ARKLE, p. 10, Entomologist xxxiii; *P. festuca, contexta* and *putnami*, note, SNELLEN, pp. 46, 47, Verslag, Tijdschr. Ent. xliii; *P. chrysis* var. n. *disjuncta*, SCHULTZ, p. 349, Illustr. Zeitschr. Ent. v; cf. TUTT, t. c. p. 383.
- P. generosa*, Zeitun, STAUDINGER, pl. vi, fig. 8, p. 380, Deutsche ent. Zeitschr. Lep. xii; *P. hamptoni*, China, LEECH, p. 586, Tr. ent. Soc. London 1900; *P. chillagoes*, Queensland, LUCAS, p. 150, P. Soc. Queensland xv; *P. epsilon*, Alaska, OTTOLENGUI, p. 494, P. Washington Ac. ii : n. spp.
- Poeta denotalis* Walk., figure, pl. i, fig. 25, SWINHOE, Cat. Lep. Het. ii.
- Polia conspicua*, p. 94, *P. montana*, p. 95, China, LEECH, Tr. ent. Soc. London 1900; *P. extincta*, p. 471, *acera*, p. 472, *dispar*, p. 473, *ochracea*, p. 474, N. America, SMITH, P. U. S. Mus. xxii : n. spp.
- Polydesma glaucinans*, larva, pupa, pl. xlix, figg. 22, 23, p. 318, FAWCETT, Tr. Zool. Soc. London xv.
- P. staudingeri*, Corea, p. 551, *grisea*, Japan, China, p. 552, LEECH, Tr. ent. Soc. London 1900; *P. opala*, Bismarck Arch., PAGENSTECHER, p. 99, pl. ii, fig. 21, Zoologica xxix; *P. graphica*, Buru, HOLLAND, p. 566, Nov. Zool. vii : n. spp.
- Polyphenis sericata* var., FUCHS, p. 46, Jahrb. nassau. Ver. liii.
- Prodenia littoralis*, larva and pupa, pl. q, figg. 1-3, SEMPER, Schmetterl. Philipp. ii.
- Prospalta siderea*, p. 121, *contigua, parva*, p. 122, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Pseudaglossa butleri*, p. 616, *albomaculata, annulata*, p. 617, China, LEECH, t. c.; *P. antipodalis*, p. 573, *P. buruensis*, p. 574, Buru, HOLLAND, Nov. Zool. vii : n. spp.
- Pseudohadena minuta*, Centr. Asia, PÜNGELER, pl. ix, fig. 10, p. 293, Deutsche ent. Zeitschr. Lep. xii; *P. deceptrix*, Jordan, STAUDINGER, pl. v, fig. 15, p. 369, t. c. : n. spp.
- Pseudophia oppia*, p. 18, pl. i, fig. 1, *lineata*, p. 19, fig. 7, Somaliland, DRUCE, P. Zool. Soc. London 1900, n. spp.
- Pterocheta* n. g. near *Thermesia*, for *P. dohertyi* n. sp., Buru, HOLLAND, p. 568, Nov. Zool. vii.
- Pterocyclophora hamptoni*, Philippines, pl. lx, fig. 16, p. 541, SEMPER, Schmetterl. Philipp. ii, n. sp.
- Pterogonia aurigutta* Walk. (as *Thalatta*), figure, pl. ii, fig. 7, SWINHOE, Cat. Lep. Het. ii.
- Ragana* n. g. for pt. of *Hydrillodes*, SWINHOE, p. 204, t. c.
- Ragonotia* n. g. near *Senta*, for *R. striata* n. sp., Amurland, pl. vi, fig. 15, p. 372, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii.
- Raparna didyma, confusa*, Madagascar, MABILLE, p. 734, Ann. Soc. ent. France lxxviii; *R. costiplaga*, Buru, HOLLAND, p. 572, Nov. Zool. vii : n. spp.
- Rhanidophora enucleata*, W. Africa, MABILLE, p. 732, Ann. Soc. ent. France lxxviii, n. sp.

*Rectipalpula* subg. n., cf. *Oxyodes*.

*Rema* n. g. for part of *Polydesma*, SWINHOE, p. 121, Cat. Lep. Het. ii.

*Remigia frugalis*, larva, pl. 7, fig. 2, p. 565, SEMPER, Schmett. Philipp. ii; *R. latipes*, early stages, DYAR, p. 276, P. U. S. Mus. xxiii; larva, SWAINSON, p. 33, J. N. York Ent. Soc. viii.

*R. inferna*, p. 565, *propugnata*, China, *R. ? conspicua*, Japan, p. 566, LEECH, Tr. ent. Soc. London 1900, n. spp.

*Renia sobrialis* and *larvalis* are seasonal forms, early stages, DYAR, pp. 280-282, P. U. S. Mus. xxiii.

*Rhesala inconcinna* Walk. (as *Bocana*), pl. iv, fig. 9, *signicosta* Walk. (as *Enea*), fig. 22, figures, SWINHOE, Cat. Lep. Het. ii.

*Rhynchina mandarinalis*, p. 651, *biformatalis*, p. 652, China, LEECH, Tr. ent. Soc. London 1900, n. spp.

*Risoba obstructa*, early stages, SEMPER, pl. R, figg. 8-10, Schmett. Philipp. ii.

*Rivula subpunctata* Walk. (as *Cholimma*), figure, pl. i, fig. 20, SWINHOE, Cat. Lep. Het. ii.

*R. ? bilinealis*, China, LEECH, p. 159, Tr. ent. Soc. London 1900; *R. proleuca*, Buru, HOLLAND, p. 563, Nov. Zool. vii; *R. subrosea*, Bismarck Arch., PAGENSTECHER, p. 83, Zoologica xxix : n. spp.

*Sandava xylistis* (Meyr.), Queensland, SWINHOE, p. 192, Cat. Lep. Het. ii, n. sp.

*Saragossa* n. g., p. 111, for *Mamestra*? (*Saragossa*) *seeboldi* n. sp., p. 109, Spain, STAUDINGER, Deutsche ent. Zeitschr. Lep. xiii.

*Schinia reniformis*, p. 487, *oculata*, *ciliata*, p. 488, N. America, SMITH, P. U. S. Mus. xxii, n. spp.

*Selicanis* n. g. *Orthosides*, for *S. cinereola* n. sp., Colorado, SMITH, p. 481, t. c.

*Sesamia nonagrioides* var. *albiciliata*, natural history, ZEHNTNER (1427).

*Setagrotis quebecensis*, Canada, p. 417, *radiatus*, Nevada, p. 418, SMITH, P. U. S. Mus. xxii, n. spp.

*Silacida* n. g. for part of *Eutelia*, SWINHOE, p. 86, Cat. Lep. Het. ii; *S. apicifascia*, pl. ix, fig. 10, SEMPER, Schmett. Philipp. ii.

*Simplicia tityusalis* Walk. (as *Bocana*), figure, pl. iv, fig. 19, SWINHOE, Cat. Lep. Het. ii; *S. tityusalis*, referred to *Adrapa*, t. c. p. 593.

*S. prætectata*, China, LEECH, p. 613, Tr. ent. Soc. London 1900, n. sp.

*Spectrophysa* n. g. *Focillidæ*, p. 190, for *S. distorta* n. sp., Borneo, p. 191, SWINHOE, Cat. Lep. Het. ii.

*Spintherops rasilis*, Centr. Asia, PÜNGELER, pl. iv, fig. 7, p. 120, Deutsche ent. Zeitschr. Lep. xiii, n. sp.

*Spodoptera mauritia*, larva [described in 1894 as that of *Laphygma flavimaculata*], DYAR, p. 157, Canad. Ent. xxxii.

*Stadna* n. g. *Hypenidæ*, p. 216, for *S. nigriplaga* n. sp., Borneo, p. 217, pl. iv, fig. 24, SWINHOE, Cat. Lep. Het. ii.

*Staga* n. g. *Deltoidæ* near *Catada*, for *S. producta* n. sp., Madagascar?, MABILLE, p. 735, Ann. Soc. ent. France lxviii.

*Stenoloba*; not *Cymatophoridae* but *Sarothripinae*, REBEL, p. 107, Deutsche ent. Zeitschr. Lep. xiii.

*Stictoptera chalybea* Walk. (as *Gadirtha*), figure, SWINHOE, pl. iii, fig. 9, Cat. Lep. Het. ii; *S. cucullioides*, pl. ix, fig. 11, *ferrifera*, fig. 12, SEMPER, Schmett. Philipp. ii.

*S. brunneipennis*, p. 564, *buruana*, *paranthysala*, p. 565, Buru, HOLLAND, Nov. Zool. vii, n. spp.

*Stiria consuela*, Arizona, STRECKER, p. 34, Suppl. iii, n. sp.

*Syneda mexicana* var. n. *alba*, STRECKER, p. 35, t. c.

*Synedroida subtermina*, California, SMITH, p. 492, P. U. S. Mus. xxii, n. sp.

*Sypna subignata* Walk., figure, pl. iii, fig. 5, *S. achæoides* Walk. (as

- Elpina*, pl. iii, fig. 3, *S. subolivacea* Walk. (as *Cerbia*), pl. iv, fig. 3, figures, SWINHÖE, Cat. Lep. Het. ii.
- S. samala*, Singapore, SWINHÖE, p. 106, pl. iii, fig. 5, t. c.; *S. simplex*, p. 539, *sobrina*, p. 540, *albistigma*, p. 541, *plaga*, p. 542, *marginata*, p. 543, *postflavida*, *quadrinotata*, p. 544, *mandarina*, p. 545, China, LEECH, Tr. ent. Soc. London 1900 : n. spp.
- Sympis ochreobasis*, Bismarck Arch., PAGENSTECHER, p. 104, pl. ii, fig. 34, Zoologica xxix, n. sp.
- Teniocampa opima* var. n. *mediolugens*, SCHULTZ, p. 349, Illustr. Zeitschr. Ent. v; cf. TUTT, t. c. p. 383.
- Teniopyga sylvana*, larva, pupa, pl. xlix, figg. 10-12, p. 318, FAWCETT, Tr. Zool. Soc. London xv.
- Talapa? obliquilineata*, China, LEECH, p. 646, Tr. ent. Soc. London 1900, n. sp.
- Talariga capacior*, figure, pl. iv, fig. 4, SWINHÖE, Cat. Lep. Het. ii.
- Tambana c-album*, China, LEECH, p. 525, Tr. ent. Soc. London 1900, n. sp.
- Tapinostola improba*, Thian Schan, STAUDINGER, p. 343, Deutsche ent. Zeitschr. Lep. xii; *T. taurica*, Marasch, STAUDINGER, p. 374, t. c. : n. spp.
- Tarache admetralis* Walk. (as *Pyrallis*), figure, SWINHÖE, pl. i, fig. 14, Cat. Lep. Het. ii.
- T. sublota*, Madagascar, *decoripennis*, *costosa*, E. Africa, p. 728, *acontina*, Africa, p. 729, MABILLE, Ann. Soc. ent. France lxviii; *T. tripartita*, China, LEECH, p. 149, Tr. ent. Soc. London 1900 : n. spp.
- Targalla obliquata* Walk. (as *Eutelia*), figure, pl. ii, fig. 6, SWINHÖE, Cat. Lep. Het. ii.
- Telenilla pallida*, China, LEECH, p. 589, Tr. ent. Soc. London 1900, n. sp.
- Thalpochares wagneri* var. *ochreola*, STAUDINGER, p. 385, Deutsche ent. Zeitschr. Lep. xii.
- T. deserta*, Biskra, p. 383, *vestalis*, Dead Sea, p. 385, STAUDINGER, t. c. n. spp.
- Thargelia pusilla*, Centr. Asia, PÜNGELER, pl. iv, fig. 10, p. 118, Deutsche ent. Zeitschr. Lep. xiii, n. sp.
- Thermesia paucula*, larva, SWAINSON, p. 34, J. N. York Ent. Soc. viii.
- Thermesia clarilinea*, *junctilinea*, Africa, MABILLE, p. 732, Ann. Soc. ent. France lxviii; *T. orientalis*, *mandarina*, *T. butleri*, China, p. 570, *brunnea*, Japan, p. 571, LEECH, Tr. ent. Soc. London 1900; *T. lichenea*, Buru, HOLLAND, p. 569, Nov. Zool. vii : n. spp.
- Throana amyntoralis*, figure, pl. iv, fig. 20, SWINHÖE, Cat. Lep. Het. ii.
- Thyas honesta*, larva and pupa, pl. 8, figg. 12, 13, *indiscriminata*, larva and pupa, figg. 10, 11, p. 560, SEMPER, Schmetterl. Philipp. ii.
- Thyatira apicalis*, *flavimargo*, p. 11, *conspicua*, *ornata*, p. 12, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Tornacantia* n. g., p. 49, for *Tarache sutrix* Grote, and *T. megocula* n. sp., California, p. 58, SMITH, Tr. Amer. ent. Soc. xxvii.
- Trichopolia serrata*, Texas, SMITH, p. 479, P. U. S. Mus. xxii, n. sp.
- Trigonophora grumi* renamed *Blepharidia paspa*, PÜNGELER, p. 123, Deutsche ent. Zeitschr. Lep. xiii.
- Tripudia balteata*, p. 489, *luxuriosa*, p. 490, N. America, SMITH, P. U. S. Mus. xxii, n. spp.
- Trogacontia ruficeps* Walk. (as *Thermesia*), figure, pl. i, fig. 17, SWINHÖE, Cat. Lep. Het. ii.
- Ugia disjungens*, figure, SWINHÖE, p. 194, t. c.
- Uncula* n. g. near *Maliattha*, for *Hiccodia herbaria* Swinh., SWINHÖE, p. 52, t. c.
- Urbona sublineata* Walk., figure, pl. ii, fig. 19, SWINHÖE, t. c.
- Veia homopteroides*, figure, pl. ii, fig. 25, SWINHÖE, t. c.
- Xanthus pallidago*, Zeitun, STAUDINGER, p. 377, Deutsche ent. Zeitschr.

- Lep. xii; *X. pulchella*, Vancouver, SMITH, p. 223, Canad. Ent. xxxii : n. spp.
- Xanthoptera lignigera* Walk. (as *Rusicada*), pl. i, fig. 8, *mansueta* Walk. (as *Daona*), fig. 18, figures, SWINHÖR, Cat. Lep. Het. ii; *X. maculata*, Philippines, SEMPER, p. 522, pl. lx, fig. 3, and pl. r, figg. 16, 17, larva and pupa, Schmettlerl. Philipp. ii.
- X.?* *cœnogramma*, ?Madagascar, MABILLE, p. 730, Ann. Soc. ent. France lxxviii; *X. univittata*, Bismarck Arch., PAGENSTECHER, p. 80, Zoologica xxix : n. spp.
- Xylina*: the North American revised, SMITH, pp. 1-46, pls. i-v, Tr. Amer. ent. Soc. xxvii.
- X. amanda*, p. 24, *emarginata*, *holocinerea*, p. 28, *puella*, p. 30, *winnipeg*, p. 31, *dilatocula*, p. 42, N. America, SMITH, t. c. n. spp.
- Xylophasia fasciata*, p. 68, *submarginata*, p. 69, *chinensis*, p. 70, China, LEECH, Tr. ent. Soc. London 1900, n. spp.
- Zagira stragulata*, Bismarck Arch., PAGENSTECHER, p. 85, pl. ii, fig. 11, Zoologica xxix, n. sp.
- Zethes*; the following species of *Egnasia* of Walk. are referred to *Zethes* and figured, *athemonalis*, pl. iv, fig. 1, *hylaxalis*, pl. iii, fig. 20, *parrimonalis*, pl. iv, fig. 18, *aviusalis*, fig. 10, also *Z. metagona* Walk. (as *Thermesia*), fig. 2, SWINHÖR, Cat. Lep. Het. ii.
- Zethes humilis*, Africa or Madagascar, MABILLE, p. 733, Ann. Soc. ent. France lxxviii; *Z. lula*, Singapore, SWINHÖR, p. 189, pl. iv, fig. 8, Cat. Lep. Het. ii; *Z. mandarina*, *cana*, p. 597, *trilineata*, p. 598, *dentilineata*, p. 599, *sauacia*, p. 600, *equamea*, China, *umbrosa*, China, Japan, p. 601, *ingratata*, p. 602, *pulverea*, p. 603, *adusta*, p. 604, China, *parvula*, China, Japan, *ornata*, p. 605, *cinnamomea*, p. 606, *sordidata*, p. 607, *magna*, p. 608, China, LEECH, Tr. ent. Soc. London 1900; *Z. uncinata*, *angulata*, pl. ii, fig. 32, Bismarck Arch., PAGENSTECHER, p. 114, Zoologica xxix; *Z. grisea*, Buru, HOLLAND, p. 571, Nov. Zool. vii : n. spp.

## GEOMETRIDÆ, EPIPLEMIDÆ.

- [Cf. BARRETT (72), BASTELBERGER (77, 79), BURROWS (204), DIETZE (319), DOGNIN (340, 341), DRUCE (348), DYAR (360), FUCHS (473), HAMPSON (547), HERZ (584), HOLLAND (595), HULST (623, 625, 627), KARSCH (680), KORB (758), LOWER (828, 829), LUCAS (832), MABILLE (843), MEYRICK (906), PAGENSTECHER (975), PETERSEN (993), PROUT (1057), PÜNGELER (1060), REBEL (1074), SCHRÖDER (1163), STAUDINGER (1269, 1270), SWINHÖR (1298, 1299), WARREN (1375, 1376).]

British *Geometridæ*, BARRETT (72).

A large number of synonymical notes relating to N. American species, not recorded below, HULST (627).

Anatomy of ♂ genital armature of *Eupithecia innotata*, SCHRÖDER (1163).

*Abbotana clemataria*, life-history, DYAR, p. 142, Psyche ix.

*Abrazas marginata* var. n. *confusa*, arctic, STRAND, p. 225, Ent. Nachr. xxvi and Arch. Naturv. Christiania xxii, No. 5, p. 28.

*A. estriada*, Chiriqui, DOGNIN, p. 222, Ann. Soc. ent. Belgique xlv, n. sp.

*Acidalia aversata* var., FUCHS, p. 48, Jahrb. naturw. Ver. liii.

*A. metohiensis*, Herzegovina, REBEL, p. 451, Verh. Ges. Wien i; *A. subrufaria*, Algeria, p. 386, *subpurpurata*, pl. vi, fig. 18, Mardin, *sanctaria*, pl. v, fig. 6, p. 387, *sublongaria*, p. 388, Jordan, *allongaria*, *consociata*, pl. vi, fig. 10, p. 390, Mardin, *substrigaria*, N. E. Siberia, p. 391, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii; *A. rubroclavaria*, p. 737, *sparipunctata*, *agrammaria*, Madagascar, *eupisda*



- p. 738, *terrearia*, *rufolutoria*, Madagascar ?, *holobapharia*, Madagascar, p. 739, MABILLE, Ann. Soc. ent. France lxviii; *A. ? floccosa*, Bismarck Arch., PAGENSTECHER, p. 148, Zoologica xxix; *A. coercita*, p. 140, *vibrata*, *partita*, p. 141, Queensland, LUCAS, P. Soc. Queensland xv; *A. partita*, p. 215, *imitans*, *nubila*, *inficeta*, p. 216, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv: n. spp.
- Adelotypa xanthobrunnea* referred to *Limonias* (*Rhopalocera*), WARREN, p. 225, Nov. Zool. vii.
- Agathia benedicta*, Bismarck Arch., PAGENSTECHER, p. 152, pl. ii, fig. 39, Zoologica xxix, n. sp.
- Aleis argillacea*, Congo, WARREN, p. 95, Nov. Zool. vii; *A. nigrocuneata*, Sumatra, WARREN, p. 112, t. c.; *A. guttata*, N. America, HULST, p. 219, J. N. York Ent. Soc. viii: n. spp.
- Allophylla invasata* var. n. *perrupta*, WARREN, p. 132, Nov. Zool. vii.
- A. ambusta*, Venezuela, id., p. 131, t. c. n. sp.
- Amaurinia paraviolascens*, Ecuador, DOGNIN, p. 217, Ann. Soc. ent. Belgique xlv; *A. auruda*, Ecuador, DOGNIN, p. 443, t. c.: n. spp.
- Amblyodes* n. g. *Selidosemina*, p. 200, for *A. commixta*, n. sp., Ecuador, p. 201, WARREN, Nov. Zool. vii.
- Amelora tetracoda*, p. 406, *paronycha*, p. 407, N. S. Wales, LOWER, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Amphidasia betularius doubledayaria* in Germany, UFFELN, p. 67, Deutsche ent. Zeitschr. Lep. xiii.
- Anteia doddsiana*, Queensland, LUCAS, p. 149, P. Soc. Queensland xv, n. sp.
- Anteiois* n. g. for part of *Eois*, p. 146, with *A. mellea*, Brazil, *obliquaria*, Orinoco, *sulphuraria*, Ecuador, p. 147, n. spp., WARREN, Nov. Zool. vii.
- Antiplecta* n. g., *Epiplemidæ* near *Dirades*, for *A. pusilla* n. sp., Dominica, WARREN, p. 121, t. c.
- Anaxa kaluga*, Jaintia Hills, SWINHAE, p. 308, Ann. Nat. Hist. vi, n. sp.
- Anisodes urcearia* var. n. *diffusa*, WARREN, p. 146, Nov. Zool. vii.
- A. raspata*, *spatara*, p. 439, *suberca*, *punctigera*, p. 440, *fastidiosa*, p. 441, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv; *A. albipupillata*, S. America, *bipartita*, Colombia, *conferta*, Jamaica, p. 141, *costinotata*, Colombia, *ferruginata*, Ecuador, p. 142, *insignata*, Brit. Guiana, *lichenæa*, Jamaica, *nigropustulata*, Brazil, p. 143, *ocularis*, Venezuela, *spissata*, Demerara, p. 144, *stramineata*, Ecuador, *subpallida*, Brazil, *subcarnearia*, with var. *grisea* Sao Paulo, p. 145, *tenera*, Rio Janeiro, p. 146, WARREN, Nov. Zool. vii: n. spp.
- Anisopera impostor*, Ecuador, *rectilinea*, Venezuela, WARREN, p. 207, Nov. Zool. vii, n. spp.
- Apicia præapicata*, Petropolis, WARREN, p. 208, t. c.; *A. venusta*, Ecuador, DOGNIN, p. 451, Ann. Soc. ent. Belgique xlv: n. spp.
- Aplodes malina* Butl. referred to *Hydata*, WARREN, p. 134, Nov. Zool. vii.
- A. pallida*, Bonaire Island, WARREN, p. 131, t. c. n. sp.
- Aplogompha oppletaria*, Ecuador, WARREN, p. 186, t. c. n. sp.
- Arhostia indecorata*, Simla, WARREN, p. 103, t. c. n. sp.
- Arrhodia fenestrata*, Queensland, LUCAS, p. 145, P. Soc. Queensland xv, n. sp.
- Asellodes*; referred to *Sterrhina*, characters, WARREN, p. 148, Nov. Zool. vii.
- Asestra albitumida*, Ecuador, WARREN, p. 208, t. c. n. sp.
- Aspidoptera* n. g. *Monoctenidæ*, for *A. navigata*, p. 146, *ambiens*, p. 147, n. spp., Queensland, LUCAS, P. Soc. Queensland xv.
- Aspilates gilvaria* var., FUCHS, p. 56, Jahrb. nassau. Ver. liii.
- Astyochia nigrita*, Bolivia, WARREN, p. 187, Nov. Zool. vii, n. sp.
- Ateloptila confusa*, Queensland, WARREN, p. 112, t. c. n. sp.

- Aterpnodes* n. g., p. 208, *Ennominae*, for *A. geminipuncta*, n. sp., Costa Rica, p. 209, WARREN, t. c.
- Atyria subdichroa*, Ecuador, DOGNIN, p. 214, Ann. Soc. ent. Belgique xliv : *A. ? mamillifera*, Ecuador, WARREN, p. 125, Nov. Zool. vii : n. spp.
- Atyriodes parapoetica*, Ecuador, DOGNIN, p. 214, Ann. Soc. ent. Belgique xliv, n. sp.
- Azata tenuilinea*, Penang, WARREN, p. 115, Nov. Zool. vii, n. sp.
- Azelina peplaria*, larva, CAUDELL, p. 583, Ent. News Philad. xi.
- A. elmonjensis*, p. 232, *munita*, p. 233, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xliv ; *A. dorsipunctata*, Venezuela, *incompta*, Bolivia, p. 209, *indistincta*, *subochreata*, with var. *nocturna*, p. 210, Colombia, *velutina*, Parana, p. 211, WARREN, Nov. Zool. vii : n. spp.
- Bapta bimaculata* var., FUCHS, p. 51, Jahrb. nassau. Ver. liii.
- Bapta perita*, p. 446, *admota*, p. 447, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xliv ; *B. erina*, Brazil, DRUCE, p. 525, Ann. Nat. Hist. v : n. spp.
- Bassodes amonia*, Jamaica, DRUCE, p. 524, t. c. n. sp.
- Berta vaga* Walk. (as *Thalera*), figure, pl. vi, fig. 8, SWINHÖE, Cat. Lep. Het. ii.
- Biston hunii*, hybrids, OBERTHUR (1952).
- Boarmia crepuscularia* var. n. *alba*, GAUCKLER, p. 371, Ent. Nachr. xxvi ; *B. acaciaria* larva, pl. xlix, fig. 24, p. 318, FAWCETT, Tr. Zool. Soc. London xv.
- B. tenuisaria*, Jordan, pl. v, fig. 3, *tenietaria*, pl. vi, fig. 1, p. 394, *fascinataria*, fig. 4, p. 395, Algeria, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii ; *B. præclarata*, Centr. Asia, PÜNGELER, pl. ix, fig. 18, p. 297, Deutsche ent. Zeitschr. Lep. xii ; *B. delatina*, Shan States, SWINHÖE, p. 308, Ann. Nat. Hist. vi ; *B. scotozonea*, Christmas Is., HAMPSON, p. 71, pl. ix, figg. 4, 15, Monogr. Christmas Island ; *B. submuscaria*, Bismarck Arch., PAGENSTECHER, p. 137, Zoologica xxxix : n. spp.
- Brachybasis* n. g. *Epiplemidæ*, for *Decetia rufescens* Butl., SWINHÖE, p. 218, Cat. Lep. Het. ii.
- Brephoscotosia* ; characters amended, WARREN, p. 171, Nov. Zool. vii.
- Brochelia subalbida*, Surinam, WARREN, p. 194, t. c. n. sp.
- Broptera ustifumosa* referred to *Cymatophora*, WARREN, p. 196, t. c.
- B. subbrunnea*, Ecuador, WARREN, p. 194, t. c. n. sp.
- Bursada oblongata*, Dorey, SWINHÖE, p. 316, Cat. Lep. Het. ii, n. sp.
- Caberodes subochrearia*, New Jersey, HULST, p. 107, Canad. Ent. xxxii, n. sp.
- Calletara schistacea*, Sarawak, SWINHÖE, p. 309, Ann. Nat. Hist. vi, n. sp.
- Callipseustes* n. g. *Selidoseminæ*, p. 201, for *C. parambicola* n. sp., Ecuador, p. 202, WARREN, Nov. Zool. vii.
- Calocalpe rosenbergi*, Ecuador, WARREN, p. 172, t. c. n. sp.
- Calocampe undulata*, life history, DYAR, p. 9, Payche ix.
- Calyptocome* n. g., type *Acidalia pannaria* Gn., with *C. roseoliva* n. sp., St. Vincent, WARREN, p. 148, Nov. Zool. vii.
- Cambogia versuta*, Walk. (as *Hyria*), figure, pl. v, fig. 23, SWINHÖE, Cat. Lep. Het. ii.
- C. muscularia*, Bolivia, DOGNIN, p. 217, Ann. Soc. ent. Belgique xliv ; *C. seria*, p. 442, *acerba*, p. 443, Ecuador, DOGNIN, t. c. : n. spp.
- Campptogramma ? fœduta*, Ecuador, WARREN, p. 172, Nov. Zool. vii, n. sp.
- Carbia culescens*, figure, pl. v, fig. 15, SWINHÖE, Cat. Lep. Het. ii.
- Cartellodes ochrea*, Ecuador, WARREN, p. 212, Nov. Zool. vii, n. sp.
- Cataclysne ? napassa*, Ecuador, DOGNIN, p. 445, Ann. Soc. ent. Belgique xliv, n. sp.
- Certima sericea*, Bogotá, WARREN, p. 212, Nov. Zool. vii, n. sp.
- Chlenias serina*, N. S. Wales, LOWER, p. 36, P. Linn. Soc. N. S. Wales xxv ;

- C. sagittaria*, Queensland, LUCAS, p. 148, P. Soc. Queensland xv : n. spp.
- Chogada perlepidaria*, Queensland, WARREN, p. 112, Nov. Zool. vii, n. sp.
- Cidaria autumnalis* var. n. *constricta*, STRAND, p. 32, Arch. Naturv. Christiania, xxii, No. 5; *C. truncata* var., p. 57, *ferrugata* var., *dilutata* varr., p. 58, *lugubrata* var., p. 60, *hastata* var., p. 61, FUCHS, Jahrb. Nassau. Ver. lili; *C. picata* var. n. *albofasciata*, GAUCKLER, p. 371, Ent. Nachr. xxvi; *C. flavicinctata* var. *relegata*, *C. vitalbata* var. *detersata*, PÜNGELER, p. 299, Deutsche ent. Zeitschr. Lep. xii.
- C. variolata*, Algeria, STAUDINGER, p. 399, pl. vi, fig. 2, Deutsche ent. Zeitschr. Lep. xii; *C. l uncinata*, Centr. Asia, PÜNGELER, pl. iv, fig. 3, p. 121, Deutsche ent. Zeitschr. Lep. xiii; *C. nanula*, Madagascar?, MABILLE, p. 737, Ann. Soc. ent. France lxviii; *C. sagittatoides*, Bismarck Arch., PAGENSTECHER, p. 144, pl. i, fig. 5, Zoologica xxix; *C. subalbata*, Colombia, *simplex*, Ecuador, DOGNIN, p. 445, Ann. Soc. ent. Belgique xlv : n. spp.
- Cidariophanes indentata*, p. 202, *perrubescens*, p. 203, Bolivia, WARREN, Nov. Zool. vii; *C. incondita*, Ecuador, DOGNIN, p. 449, Ann. Soc. ent. Belgique xlv : n. spp.
- Cimelia olga*, Transcaucasus, STAUDINGER, p. 398, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Cirsodes mosticana*, Ecuador, DOGNIN, p. 226, Ann. Soc. ent. Belgique xlv, n. sp.
- Clysia optima*, Bolivia, DOGNIN, p. 226, t. c. n. sp.
- Cnemodes dentilinea*, Ecuador, WARREN, p. 149, Nov. Zool. vii, n. sp.
- Cnephora* n. g. type *Azelina griseata* Mssn., WARREN, p. 212, t. c.
- Celuromima* n. g., *Epiplemina*, for *C. subfasciata* n. sp., Ecuador, WARREN, p. 122, t. c.
- Cenocalpe canonymphata*, California, HULST, p. 104, Canad. Ent. xxxii, n. sp.
- Comostola dyakaria*, Walk. (as *Eucrostis*), figure, pl. vi, fig. 9, SWINHOE, Cat. Lep. Het. ii.
- Craspedia furfurata* var. n. *subcarnea*, WARREN, p. 104, Nov. Zool. vii; *C. usticinctaria* Walk. (as *Acidalia*), fig., pl. v, fig. 24, SWINHOE, Cat. Lep. Het. ii.
- C. planipennis*, Sierra Leone, *rufinubes*, Unyoro, WARREN, p. 91, Nov. Zool. vii; *C. compressaria*, Bali, p. 103, *cretata*, Sula Mangoli, *margaritaria*, Celebes, *rufimixtaria*, Tenimber Islands, p. 104, *undilinea*, Lifu, p. 105, WARREN, t. c.; *C. taciturna*, Ecuador, DOGNIN, p. 444, Ann. Soc. ent. Belgique xlv; *C. approbata*, Carupano, *chlorochrea*, Parana, p. 149, *consobrinata*, Orinoco, *flexistrigata*, Brazil, *rasa*, Venezuela, p. 150, *rostrilinea*, Colombia, *unicornata*, Brazil, p. 151, *uniformata*, Trinidad, *viridipunctata*, Brazil, p. 152, WARREN, Nov. Zool. vii : n. spp.
- Craspedosis norbeata*, Buru, p. 312, *morotai*, Morty, p. 313, SWINHOE, Cat. Lep. Het. ii, n. spp.
- Cratoptera vilaria* = (*Cimicodes primularia*), var. n. *obscurata*, WARREN, p. 213, Nov. Zool. vii.
- Cryptotyla* n. g., type *Acidalia quinquelineata* Dogn., WARREN, p. 152, t. c.
- Cryptoloba etaina*, Khasia Hills, SWINHOE, p. 310, Ann. Nat. Hist. vi, n. sp.
- Cusiala bistonaria* Walk. (as *Boarmia*), pl. v, fig. 5, *decursaria*, fig. 3, figg., SWINHOE, Cat. Lep. Het. ii.
- Cyclomia costipuncta* var. n. *ocellata*, WARREN, p. 213, Nov. Zool. vii.
- C. alternata*, Bahamas, *bellula*, Carupano, p. 213, *fulvimacula*, Ecuador, *rubida*, Rio Janeiro, p. 214, WARREN, t. c. n. spp.
- Cyllopoda attenuata*, Sao Paulo, *nanipennis*, Ecuador, WARREN, p. 125, Nov. Zool. vii, n. spp.

- Cymatophora evagaria*, Ontario, HULST, p. 106, Canad. Ent. xxxii; *C. virginialis, deleta*, N. America, HULST, p. 218, J. N. York Ent. Soc. viii; *C. apicalis*, Parana, *C. ? commaculata*, Ecuador, p. 195, *C. ochracea*, Panama, *paraphiata*, Brit. Guiana, p. 196, WARREN, Nov. Zool. vii: n. spp.
- Cyphopora* n. g., *Cyllopodinae*, p. 125, for *C. dubia* n. sp., Ecuador, p. 126, WARREN, t. c.
- Cysteophora* n. g., for *C. pervertipennis* n. sp., Florida, HULST, p. 215, J. N. York Ent. Soc. viii.
- Darna marginata*, Venezuela, WARREN, p. 126, Nov. Zool. vii, n. sp.
- Decetia dichromata*, fig., pl. v, fig. 1, SWINHOE, Cat. Lep. Het. ii.
- Deilinia sericea* referred to *Nipteria*, WARREN, p. 190, Nov. Zool. vii.
- D. solumata*, Winnipeg, HULST, p. 217, J. N. York Ent. Soc. viii, n. sp.
- Deinoptila* n. g., type *Cidaria penicula* Dogn., WARREN, p. 172, Nov. Zool. vii.
- Diastictis epidesma*, S. Australia, LOWER, p. 405, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Dichorda* n. g., type *Geometra iridaria* Gu., with *D. allineata* n. sp., Venezuela, WARREN, p. 132, Nov. Zool. vii.
- Dichostrepisia* merged in *Stenele*, WARREN, p. 192, t. c.
- Dichromatopodia deflexa*, Venezuela, WARREN, p. 152, t. c. n. sp.
- Dichromodes steropias* var. n. *neziistriga*, WARREN, p. 101, t. c.
- D. subdentata*, fig., pl. v, fig. 9, SWINHOE, Cat. Lep. Het. ii.
- D. infans*, Jamaica, WARREN, p. 122, Nov. Zool. vii, n. sp.
- Dithecodes* n. g. *Geometrinae*, for *D. erasa* n. sp., Japan, WARREN, p. 102, t. c.
- Dolichopyge* n. g., *Hydriomeninae*, for *D. bifasciata* n. sp., Parana, WARREN, p. 173, t. c.
- Drucia* n. g. for *Racheospila asmura* Druce and *D. delphinata* n. sp., Sao Paulo, WARREN, p. 133, t. c.
- Duliophyle agitata* var. n. *diluta*, WARREN, p. 113, t. c.
- Dysephyra errabunda, noverca*, p. 441, *subrosea*, p. 442, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv, n. spp.
- Dysphania magnifica*, Queensland, SWINHOE, p. 377, Cat. Lep. Het. ii, n. sp.
- Ectropidia exprimata* Walk. (as *Acidalia*), fig., pl. v, fig. 11, SWINHOE, t. c.
- E. fimbripedata*, Perak, WARREN, p. 113, Nov. Zool. vii, n. sp.
- Ectropis subrugata* Walk. (as *Tephrosia*), pl. v, fig. 12, *decursaria* Walk. (as *Tephrosia*), fig. 21, figg., SWINHOE, Cat. Lep. Het. ii.
- E. hieroglyphica*, p. 33, *plectroneura*, p. 34, New South Wales, LOWER, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Egea pellucida*, Altai, STAUDINGER, p. 396, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Enconista miniosaria*, variation, JOANNIS, pp. 189-191, cuts, Bull. Soc. ent. France 1900.
- Eois*; erroneous application, WARREN, p. 146, Nov. Zool. vii; *E. suavata*, life-history, DYAR, p. 106, Psyche ix.
- E. macrostyla*, E. Africa, *sublimbaria*, S. Africa, WARREN, p. 92, Nov. Zool. vii; *E. carneofasciata*, Java, p. 105, *ferrilinea, fucosa*, Queensland, *glabripennis*, Java, p. 106, WARREN, t. c.; *E. crossii, purpurascens*, Florida, HULST, p. 105, Canad. Ent. xxxii; *E. suavata, micropterata*, Florida, HULST, p. 217, J. N. York Ent. Soc. viii: n. spp.
- Epicimelia* n. g. for *E. theresia* n. sp., pl. vii, figg. 5, 6, n. sp., Centr. Asia, KORB, p. 301, Deutsche ent. Zeitschr. Lep. xii.
- Epicosymbia conspersa*, Sumba, WARREN, p. 107, Nov. Zool. vii, n. sp.
- Epiplema nivosaria* Walk. (as *Erosia*), fig., pl. v. fig. 2, SWINHOE, Cat. Lep. Het. ii; *E. inhians*, pl. ix, fig. 2, p. Island.



- E. basipuncta, bellissima*, Penang, WARREN, p. 101, Nov. Zool. vii; *E. kohistaria*, Andaman Islands, SWINHOE, p. 307, Ann. Nat. Hist. vi; *E. lacteata*, p. 577, *buruana*, p. 578, Buru, HOLLAND, Nov. Zool. vii; *E. rufula*, Ecuador, WARREN, p. 123, Nov. Zool. vii: n. spp.
- Epirrhoe corrivulata*, Parana, p. 173. *imbecillata*, Bolivia, p. 174, *rufilineata*, Ecuador, *subpulchrata*, Bolivia, p. 175, WARREN, t. c. n. spp.
- Erateina herbertina, aida*, p. 221, *delineata*, p. 222, Bolivia, DOGNIN, Ann. Soc. ent. Belgique xlv; *E. subtristata*, Bolivia, DOGNIN, p. 446, t. c.: n. spp.
- Eriopygidia* n. g., p. 175, type *Eucosmia angustaria* H.-S., with *E. olivata*, Jamaica, *semirubra*, Bolivia, n. spp., p. 176, WARREN, Nov. Zool. vii.
- Erschoffia* n. n. for *Eversmannia* Ersch., p. 221, *E. candidaria*, pl. v, fig. 18, *biplagiata*, fig. 19, figg., SWINHOE, Cat. Lep. Het. ii.
- Erythrolophus bicolor*, Loja, DOGNIN, p. 444, Ann. Soc. ent. Belgique xlv, n. sp.
- Euacidalia germana*, with var. *obscura*, Jamaica, WARREN, p. 153, Nov. Zool. vii, n. sp.
- Eucarestus* n. g. for *E. nobilitans, patrocinator*, n. spp., Queensland, LUCAS, p. 142, P. Soc. Queensland xv.
- Euchlena abnormalis*, Winnipeg, HULST, p. 220, J. N. York. Ent. Soc. viii, n. sp.
- Euchleana serrata*, life-history, DYAR, pp. 130-132, Psyche ix.
- Euchloria aurigera*, Bismarck Arch., PAGENSTECHER, p. 155, Zoologica xxix, n. sp.
- Eucosmia pravata*, Bolivia, DOGNIN, p. 444, Ann. Soc. ent. Belgique xlv, n. sp.
- Eucrostis rufostellata*, p. 740, *rufocellata, lilliputaria*, p. 741, Madagascar, MABILLE, Ann. Soc. ent. France lxviii, n. spp.
- Eudule circumducta*, Ecuador, WARREN, p. 185, Nov. Zool. vii, n. sp.
- Euephyra subsimilis*, Ecuador, WARREN, p. 153, t. c. n. sp.
- Eugonobapta brunneolineata*, Florida, HULST, p. 218, J. N. York. Ent. Soc. viii, n. sp.
- Euperizoma* n. g. near *Perizoma*, for *E. nubicincta*, n. sp., Costa Rica, WARREN, p. 177, Nov. Zool. vii.
- Eupithecia carpophagata*?, life-history, pp. 95-101, pl. i, *E. undata* Fr. (= *scriptaria* H.-S.), p. 101, DIETZE, Deutsche ent. Zeitschr. Lep. xiii; *E. silenata* var., p. 63, *chloerata* var., p. 65, *exiguata* food-habits, p. 66, FUCHS, Jahrb. nassau. Ver. liii; *E. ericeata, millerata* and allies, synonymy, BASTELBERGER, pp. 129, etc., Illustr. Zeitschr. Ent. v; *E. rectangulata*, larval habits, BROWN, p. xi, Pr.-verb. Soc. Bordeaux lv.
- E. brunneata*, Mardin, STAUDINGER, pl. v, fig. 11, p. 400, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Eusarca subfasciata* var. n. *crocea*, WARREN, p. 215, Nov. Zool. vii.
- E. multilinea*, Venezuela, p. 214, *umbrilineata*, p. 215, Brazil, WARREN, t. c. n. sp.
- Eusenea rotundata*, Venezuela, WARREN, p. 215, t. c. n. sp.
- Fidonia acuta*, Cape of Good Hope, WARREN, p. 96, Nov. Zool. vii; *F. marginata*, Venezuela, WARREN, p. 199, t. c.: n. spp.
- Fisera perplexata*, fig., pl. vii, fig. 3, SWINHOE, Cat. Lep. Het. ii.
- Galanageia* n. g. *Monoctenia*, p. 147, for *G. quadrigamma* n. sp., Queensland, p. 148, LUCAS, P. Soc. Queensland xv.
- Gastrina denticulata*, Tasmania, pl. iv, fig. 25, p. 278, SWINHOE, Cat. Lep. Het. ii, n. sp.
- Gelasma discipennata* Walk. (as *Thalera*), fig., pl. vi, fig. 6, SWINHOE, t. c.
- G. hemithearia*, Brazil, WARREN, p. 133, Nov. Zool. vii, n. sp.
- Gnophos desparataria*, Tysyl Jast, p. 54, *lutipennaria*, Sining Tebet, p. 56, FUCHS, Jahrb. nassau. Ver. liii, n. spp.

- Gonodela siennata*, Niger, WARREN, p. 95, Nov. Zool. vii, n. sp.  
*Graphipidus? pilosa*, Ecuador, DOGNIN, p. 444, Ann. Soc. ent. Belgique xlv, n. sp.  
*Gymnoscelis derogata* Walk. (as *Eupithecia*), fig., SWINHOE, p. 350, Cat. Lep. Het. ii.  
*Gypsochroa hæsitata*, life-history, DYAR, p. 59, Psyche ix.  
*Hadesina* n. g., *Cyllopodinae*, p. 126, for *H. limbaria* n. sp., Ecuador, p. 127, WARREN, Nov. Zool. vii.  
*Hæmalea circumducta*, Venezuela, p. 153, *minuta*, S. America, *penumbrata*, Dominica, *perlata*, St. George's, p. 154, *straminea*, Ecuador, p. 155, WARREN, t. c. n. sp.  
*Halophanes* n. g., *Geometrinae*, p. 102, for *Maxates xanthochlora* Swinh., WARREN, t. c.  
*Hannaptera? caliginosa*, Ecuador, p. 177, *H. tenera*, with var. *griselda*, S. America, p. 178, WARREN, t. c.; *H. cinerascens*, Ecuador, *colombaria*, Colombia, DOGNIN, p. 218, Ann. Soc. ent. Belgique xlv : n. spp.  
*Hasodina dardania*, p. 521, *salapia*, Colombia, *puta*, Bolivia, p. 522, DRUCE, Ann. Nat. Hist. v; *H.? incongruata*, Bogotá, WARREN, p. 216, Nov. Zool. vii : n. spp.  
*Hastina ternura*, Ecuador, DOGNIN, p. 446, Ann. Soc. ent. Belgique xlv, n. sp.  
*Heliothea iliensis* var. n. *herzi*, HERZ, p. 456, Annuaire Mus. St. Petersb. v.  
*Hemithea vernaria*, synonymy, PROUT, p. 181, Ent. Rec. xii.  
*H. dentata*, Madagascar, MABILLE, p. 740, Ann. Soc. ent. France lxviii, n. sp.  
*Herbita capona*, Brazil, DOGNIN, p. 229, Ann. Soc. ent. Belgique xlv; *H. flavidiscata*, Ecuador, WARREN, p. 216, Nov. Zool. vii : n. spp.  
*Heterophyra distinctata*, Dominica, *fuscicosta*, Ecuador, p. 155, *fuscidiscaria*, Brazil, *illimitata*, Ecuador, p. 156, WARREN, Nov. Zool. vii, n. spp.  
*Heterostegane semifasciata*, Buru, WARREN, p. 111, t. c. n. sp.  
*Heterusia magnifica*, Bolivia, *obliquistriga* (no loc.), WARREN, p. 185, t. c. n. spp.  
*Heterusia barbara*, *morena*, p. 219, *copela*, Ecuador, *dilectaria*, Colombia, p. 220, DOGNIN, Ann. Soc. ent. Belgique xlv, n. spp.  
*Hibernia rupicaprararia* var., FUCHS, p. 52, Jahrb. nassau. Ver. liii.  
*Holoterpna* n. g., for *H. diagrapharia*, pl. ix, fig. 14, n. sp., Centr. Asia, PÜNGELER, p. 296, Deutsche ent. Zeitschr. Lep. xii.  
*Hyalocampa* n. g. *Nephodiinae*, for *H. specularis* n. sp., Ecuador, WARREN, p. 187, Nov. Zool. vii.  
*Hydriomena amorata*, California, HULST, p. 104, Canad. Ent. xxxii; *H. prælatata*, p. 178, *præmundata*, p. 179, Bolivia, WARREN, Nov. Zool. vii : n. spp.  
*Hygrochroa clota*, Colombia, DRUCE, p. 521, Ann. Nat. Hist. v, n. sp.  
*Hymenomima camerata*, Ecuador, WARREN, p. 197, Nov. Zool. vii, n. sp.  
*Hypephyra etawa*, Jaintia Hills, SWINHOE, p. 308, Ann. Nat. Hist. vi, n. sp.  
*Hyphedyle albinacula*, Ecuador, WARREN, p. 124, Nov. Zool. vii, n. sp.  
*Hypoplectis adspersaria* Hb., early stages, UFFELN, pp. 64-66, Deutsche ent. Zeitschr. Lep. xiii.  
*Hyposidra leucomela* var. n. *nigrata*, WARREN, p. 116, Nov. Zool. vii.  
*Hyria quadricostaria* Walk., cf. *Noctuidæ*, *Corgatha*.  
*Hyriogona* n. g., near *Heterophyra*, p. 156, for *H. capitata*, Brazil, *fimbriata*, Ecuador, n. spp., p. 157, WARREN, Nov. Zool. vii.  
*Induna curvimargo*, Zambesi, WARREN, p. 92, t. c. n. sp.  
*Iodis vernaria*, synonymy, PROUT, p. 180, Ent. Rec. xii.  
*I.? longipalpis*, Venezuela, WARREN, p. 133, Nov. Zool. vii, n. sp.

- Ira subcostata*, Ecuador, WARREN, p. 217, t. c.; *I. marmorata*, p. 227, *subapicalis*, p. 228, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv : n. spp.
- Ichnopteris chryses* var. n. *dispar*, WARREN, p. 203, Nov. Zool. vii.
- Isochromodes dispar*, Ecuador, WARREN, p. 217, t. c. n. sp.
- Isopenia albivertex*, Natal, WARREN, p. 93, t. c. n. sp.
- Larentia pauletina*, Ecuador, DOGNIN, p. 217, Ann. Soc. ent. Belgique xlv, n. sp.
- Lathochlora* n. g., *Geometrinæ*, p. 90, for *L. inornata* n. sp., Niger, p. 91, WARREN, Nov. Zool. vii.
- Lepiodes exilis*, Venezuela, WARREN, p. 197, t. c. n. sp.
- Leptotenista subrufa*, Ecuador, WARREN, p. 124, t. c. n. sp.
- Leptomeris hypocallista*, S. Australia, LOWER, p. 405, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Leucoontha subfumida*, Venezuela, WARREN, p. 123, Nov. Zool. vii, n. sp.
- Leucozena* n. g. *Astheninæ*, for *L. lactea* n. sp., E. Africa, WARREN, p. 94, t. c.
- Lissocharis* n. g. *Nephodiinæ*, for *L. nigrivenata* n. sp., Ecuador, WARREN, p. 188, t. c.
- Lissochlora* n. g., p. 134, type *Aplodes flavifimbria* Warr., with *L. incognita* n. sp., S. America, p. 135, WARREN, t. c.
- Lissopsis dukinfieldi*, Parana, WARREN, p. 171, t. c. n. sp.
- Lobophora coartata*, Centr. Asia, PÜNGBELER, pl. ix, fig. 17, p. 298, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Lobopola* n. g., type *Boarmia cimarrona* Dogn., WARREN, p. 203, Nov. Zool. vii.
- Longipalpa* n. g. near *Abraxas*, for *L. circumducta*, n. sp., Bismarck Arch., PAGENSTECHER, p. 143, Zoologica xxix.
- Lophochlora cristifera* Walk. (as *Thalera*), fig., pl. vi, fig. 5, SWINHOE, Cat. Lep. Het. ii.
- Lophocrita undifera* Walk. (as *Thalera*), fig., pl. vi, fig. 10, SWINHOE, t. c.
- Loxaspilates torcida*, Ecuador, DOGNIN, p. 449, Ann. Soc. ent. Belgique xlv, n. sp.
- Luxiaria euchlorata*, Buru, HOLLAND, p. 579, Nov. Zool. vii, n. sp.
- Lygris populata* var. n. *lutea*, STRAND, p. 31, Arch. Naturv. Christiania xxii, No. 5, and p. 225, Ent. Nachr. xxvi.
- Macaria alboviridis*, Madagascar?, MABILLE, p. 736, Ann. Soc. ent. France lxviii; *M. albapicaria*, Buru, HOLLAND, p. 579, Nov. Zool. vii; *M. atomaria*, Bismarck Arch., PAGENSTECHER, p. 132, Zoologica xxix : n. spp.
- Macroneuroides* n. g. *Cyllopodinæ*, for *M. albimacula*, n. sp., Bogotá, WARREN, p. 127, Nov. Zool. vii.
- Maidana* n. g. for *Macaria tetragonata* Walk., SWINHOE, p. 280, Cat. Lep. Het. ii.
- Mecoceras nitocris*, life-history, DYAR, p. 69, Psyche ix.
- Melinodes furva*, Bogotá, WARREN, p. 218, Nov. Zool. vii, n. sp.
- Mesolenca niveifasciata*, N. America, HULST, p. 216, J. N. York Ent. Soc. viii, n. sp.
- Metrocampa margaritata*, synonymy, PROUT, p. 180, Ent. Rec. xii.
- Microbiston tartaricus*, figure, STAUDINGER, pl. vii, fig. 12, Deutsche ent. Zeitschr. Lep. xii.
- M. turanicus*, Centr. Asia, id. p. 393, t. c. n. sp.
- Microgonia apidania* var. n. *caliginosa*, WARREN, p. 218, Nov. Zool. vii.
- M. olivata*, with var. *terrosa*, Bolivia, DOGNIN, p. 227, Ann. Soc. ent. Belgique xlv; *M. insolita*, Colombia, WARREN, p. 218, Nov. Zool. vii : n. spp.
- Microloxia delucida*, p. 135, *apicata*, p. 136, Brazil, WARREN, t. c. n. spp.
- Microxydia brunnea*, Jamaica, WARREN, p. 219, t. c. n. sp.

- Mimocharis* n. g. type *Heterusia mosgala* Th.-Mg., WARREN, p. 200, t. c.  
*Mixopsis* ? *casta*, Peru, p. 219, *pallidaria*, Bolivia, p. 220, WARREN, t. c. n. spp.  
*Mnesithetis* n. g. (Warren) for *Hemithea idæa* Sw., SWINHOE, p. 370, Cat. Lep. Het. ii.  
*Momonipta* ? *semilugens*, Bolivia, WARREN, p. 128, Nov. Zool. vii, n. sp.  
*Monoctophora* n. g. *Monocteniidae*, for *M. stillans*, p. 144, *caprina*, p. 145, n. spp., Queensland, LUCAS, P. Soc. Queensland xv.  
*Mychonia tepida*, p. 451, *infusata*, p. 452, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv, n. spp.  
*Myrioblephara pustulata*, Penang, WARREN, p. 114, Nov. Zool. vii, n. sp.  
*Nadagara scitilineata*, figure, pl. v, fig. 10, SWINHOE, Cat. Lep. Het. ii.  
*N. obrussata*, Buru, HOLLAND, p. 578, Nov. Zool. vii, n. sp.  
*Narragodes* n. g. *Fidoninae* for *N. fuscata* n. sp., Brazil, WARREN, p. 200, t. c.  
*Nelo divisa*, Ecuador, WARREN, p. 192, t. c. n. sp.  
*Nematocampa decolorata*, Parana, WARREN, p. 220, t. c. n. sp.  
*Nemoria viridata*, synonymy, PROUT, p. 182, Ent. Rec. xii ; *N. albicinctaria* Walk. (as *Geometra*), figure, pl. vi, fig. 7, SWINHOE, Cat. Lep. Het. ii.  
*N. dyarii*, N. America, HULST, p. 105, Canad. Ent. xxxii ; *N. nigroapicalis*, Colombia, DOGNIN, p. 439, Ann. Soc. ent. Belgique xlv : n. spp.  
*Neochrysa* n. g. p. 157, near *Heterephyra*, for *N. comosa* n. sp., Brazil, p. 158, WARREN, Nov. Zool. vii.  
*Neosterrhu* n. g. near *Craspedia*, for *N. thetis* n. sp., Costa Rica, etc., WARREN, p. 158, t. c.  
*Nepheloleuca absentimacula*, Venezuela, WARREN, p. 221, t. c. n. sp.  
*Nipteria approximata*, p. 222, *pellucida*, Bolivia, *bilinea*, Brazil, p. 223, DOGNIN, Ann. Soc. ent. Belgique xlv ; *N. maturata*, p. 447, *erna*, *cucula*, *albida*, p. 448, S. America, DOGNIN, t. c. ; *N. conjunctiva*, Parana, p. 188, *fedata*, Colombia, *funeralis*, Peru, *intervallata*, p. 189, *N. ? satellites*, Ecuador, *N. satyrata*, Merida, p. 190, *comosa*, Ecuador, p. 191, WARREN, Nov. Zool. vii : n. spp.  
*Numeria castilvaria*, Guadarrama, STAUDINGER, p. 392, Deutsche ent. Zeitschr. Lep. xii, n. sp.  
*Nyssia zonaria* in the Hebrides, BARRETT, p. 9, Ent. Mag. xxxvi, GRIFFITH, t. c. p. 41.  
*Ochyria inamorata*, Bolivia, WARREN, p. 179, Nov. Zool. vii, n. sp.  
*Enoptila venusta*, Dominica, WARREN, p. 204, t. c. n. sp.  
*Oospila concinna*, Merida, *congener*, Demerara, WARREN, p. 136, t. c. n. sp.  
*Ophthalmodes pupillata* Walk. (as *Boarmia*), figure, pl. v, fig. 2, SWINHOE, Cat. Lep. Het. ii.  
*O. fasciata*, Penang, WARREN, p. 114, Nov. Zool. vii, n. sp.  
*Ophthalmophora erionia*, p. 522, Peru, *hamon*, *halala*, *sardes*, p. 523, Colombia, *geryon*, Ecuador, *cluana*, Centr. America, p. 534, DRUCE, Ann. Nat. Hist. v : n. spp.  
*Oporabia autumnata* varr. figured, pls. 1, 2 ; distinguished from *dilatata*, PROUT, p. 55, Entomologist xxxiii.  
*Organopoda* ? *sabularia*, Ecuador, DOGNIN, p. 442, Ann. Soc. ent. Belgique xlv, n. sp.  
*Ornithospila cincta* Walk. (as *Geometra*), figure, pl. vi, fig. 2, SWINHOE, Cat. Lep. Het. ii.  
*Orthofidonia elsinora*, California, HULST, p. 218, J. N. York Ent. Soc. viii.  
*Pachypalpia* n. g. *Prosopopolhinae*, p. 97, for *P. subalbata* n. sp., E. Africa, p. 98, WARREN, Nov. Zool. vii.  
*Paragonia longidens*, Ecuador, p. 221, *planimargo*, Venezuela, p. 222, WARREN, t. c. n. spp.  
*Parallage* n. g. *Nephodiinae*, for *P. membranæ* p. 191, t. c.



- Paralygris* n. g., type *Eustroma delecta* Leech, WARREN, p. 110, t. c.  
*Parasynegia rufigrisea*, Old Calabar, WARREN, p. 94, t. c. n. sp.  
*Pareclipsis punctata*, Natal, WARREN, p. 97, t. c. n. sp.  
*Periclina flavotincta*, Colombia, *yvonina*, p. 231, *esquina*, *unicolor*, *lapa*, p. 232, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv, n. spp.  
*Perizera maculifera*, Queensland, SWINHÖE, p. 310, Ann. Nat. Hist. vi, n. sp.  
*Perizoma muscosata*, Parana, WARREN, p. 180, Nov. Zool. vii, n. sp.  
*Pero muricolor*, Colombia, WARREN, p. 222, t. c. n. sp.  
*Perusia subustimaculata*, Ecuador, WARREN, p. 222, t. c. n. sp.  
*Petelia fulva*, Florida, WARREN, p. 204, t. c. n. sp.  
*Phaeochlæna basalis*, Honduras, *nubilosa*, Ecuador, WARREN, p. 128, t. c. n. sp.  
*Phaulostathma* n. g. type *Eupithecia disformata* Dogn., WARREN, p. 166, t. c.  
*Phellinodes coscoja*, Ecuador, DOGNIN, p. 214, Ann. Soc. ent. Belgique xlv, n. sp.  
*Phigalia denticulata*, Texas, HULST, p. 219, J. N. York Ent. Soc. viii, n. sp.  
*Philereme nigrescens*, Oregon, HULST, p. 104, Canad. Ent. xxxii, n. sp.  
*Phorodesma smaragdaria*, variation, larval habits, BURROWS, pp. 113–115, Ent. Rec. xii.  
*P. hemistrigata*, Madagascar, MABILLE, p. 740, Ann. Soc. ent. France lxviii, n. sp.  
*Phrudocorda*, characters amended, WARREN, p. 97, Nov. Zool. vii.  
*Physocleora nivea*, Ecuador, DOGNIN, p. 223, Ann. Soc. ent. Belgique xlv, n. sp.  
*Pisoraca thermosaria* Walk. (as *Acidalia*), pl. v, fig. 22, *scriptata* Walk. (as *Anisodes*), pl. vi, fig. 20, SWINHÖE, Cat. Lep. Het. ii.  
*Plagodis kempii*, N. America, HULST, p. 220, J. N. York Ent. Soc. viii, n. sp.  
*Platypepla* n. g. *Semiiothisina*, for *P. nudaria* n. sp., S. Africa, WARREN, p. 96, Nov. Zool. vii.  
*Plectroboarmia* Butl., referred to *Hydriomenina*, WARREN, p. 180, t. c.  
*Plenymyriopsis olivacea*, Costa Rica, WARREN, p. 180, t. c. n. sp.  
*Pogonogyia* n. g., *Sterrhina*, p. 158, for *P. rufulata* n. sp., Venezuela, p. 159, WARREN, t. c.  
*Polla quadrifasciata*, Ecuador, WARREN, p. 222, t. c.; *P. aristarioides*, Ecuador, DOGNIN, p. 231, Ann. Soc. ent. Belgique xlv : n. spp.  
*Polygraphodes denticulata*, Parana, WARREN, p. 159, Nov. Zool. vii, n. sp.  
*Polyphasia truncata*, *rufibrunnea* subsp. n., WARREN, p. 181, t. c.  
*Pomasia amplificata*, figure, pl. v, fig. 13, SWINHÖE, Cat. Lep. Het. ii.  
*Prasinochrysa* n. g., type *eucharis* Drury, WARREN, p. 160, Nov. Zool. vii.  
*Preas angelus*, figured, pl. v, fig. 7, ROTHSCHILD, Nov. Zool. vii.  
*Pristopera* n. g. *Ennomina*, for *P. hepaticata* n. sp., Central China, SWINHÖE, p. 309, Ann. Nat. Hist. vi.  
*Problepsis argentea*, Dammer Is., WARREN, p. 107, Nov. Zool. vii, n. sp.  
*Prochoerodes cubitata*, Brit. Guiana, WARREN, p. 223, t. c. n. sp.  
*Prospasta* n. g., near *Ptychopoda*, for *P. elata* n. sp., Ecuador, WARREN, p. 160, t. c.  
*Psaliodes infantula*, Ecuador, WARREN, p. 181, t. c. n. sp.  
*Psamatthia subangulata*, St Vincent, WARREN, p. 123, t. c. n. sp.  
*Pseudognophos* n. g. near *Gnophos*, for *P. mardinata* n. sp., Mesopotamia, pl. vi, fig. 12, STAUDINGER, p. 395, Deutsche ent. Zeitschr. Lep. xii.  
*Pseudoterpna saturataria* Walk. (as *Hypochroma*), pl. v, fig. 6, *albifusaria* Walk. (as *Boarmia*), fig. 7, *horridata* Walk. (as *Hypochroma*), pl. vi, fig. 3, SWINHÖE, Cat. Lep. Het. ii.  
*P. blanda*, Bismarck Arch., PAGENSTECHER, p. 151, Zoologica xxix, n. sp.

- Psilalcis breta* and *inceptaria*, distinguished, SWINHOE, p. 287, Cat. Lep. Het. ii.
- Psilosetia pura*, Venezuela, WARREN, p. 192, Nov. Zool. vii, n. sp.
- Ptychopoda basicostalis*, *squamulata*, S. Africa, WARREN, p. 93, t. c.; *P. comparanda*, Ceylon, *decidua*, N.W. India, p. 107, *robusta*, Philippines, *sextinotata*, Penang, p. 108, *squamipunctata*, Java, p. 109, WARREN, t. c.; *P. atriseriata*, Surinam, *flavicosta*, Parana, p. 161, *gibbosa*, Grenada, *indecora*, Dominica, *infantula*, Bonaire Is., p. 162, *P. longipedata*, Argentina, *P. œdipus*, Ecuador, *pedissequa*, Venezuela, p. 163, *substrigata*, Parana, p. 164, WARREN, t. c. : n. spp.
- Ptychorrhœ* n. g. type *Opisogonia rayata* Dogn., WARREN, p. 181, Nov. Zool. vii.
- Racheolopha* n. g. for part of *Racheospila*, with *R. flavicincta*, Venezuela, *similiplaga*, N. Friborgo, p. 137, *alboseriata*, Venezuela, *isolata*, New Grenada, *parvipuncta*, Demerara, *purpureotincta*, Venezuela, p. 138, *remota*, Costa Rica, *rufiguttata*, Venezuela, p. 139, n. spp., WARREN, t. c.
- Racheospila sigillaria* var. n. *intensa*, WARREN, p. 139, t. c.; *R. saltusaria*, life-history, DYAR, p. 118, Psyche ix.
- Rheumatoptera tristata*, *sociata* varr., STICHEL, pp. 144, 145, Berlin. ent. Zeitschr. xlv.
- Rhinoprora palpata* var. n. *decolorata*, WARREN, p. 109, t. c.
- Rhodochlora roseipalpis* var. n. *basicostalis*, DOGNIN, p. 215, Ann. Soc. ent. Belgique xlv.
- R. discipuncta*, Bolivia, WARREN, p. 140, Nov. Zool. vii, n. sp.
- Rhodostrophia obscura*, Chili, WARREN, p. 164, t. c. n. sp.
- Rhomborista undiferata* Walk. (as *Comibœna*), figure, pl. vi, fig. 1, SWINHOE, Cat. Lep. Het. ii.
- Rhopalista albidivisa*, Venezuela, *requisitata*, Bolivia, p. 168, *rosenbergi*, Ecuador, *undulosa*, Parana, p. 169, WARREN, Nov. Zool. vii, n. spp.
- Rhopalodes seminivea*, Bolivia, p. 170, *variegata*, Parana, p. 171, WARREN, t. c. n. spp.
- Sabulodes paraniebla*, Colombia, *primada*, p. 229, *esquina*, *unicolor*, *lapa*, Ecuador, p. 230, DOGNIN, Ann. Soc. ent. Belgique xlv; *S. pumili*, Ecuador, DOGNIN, p. 450, t. c. : n. spp.
- Scœa casiopecta*, Bolivia, *discinota*, Merida, WARREN, p. 129, Nov. Zool. vii, n. spp.
- Scodiona leucogrammaria*, Centr. Asia, PÜNGELER, pl. iv, fig. 6, p. 121, Deutsche ent. Zeitschr. Lep. xiii, n. sp.
- Scodionyx* n. g. near *Scodiona*, for *S. mysticus* n. sp., Dead Sea, pl. v, fig. 2, STAUDINGER, p. 397, op. cit. xii.
- Scotorythra diceraunia*, Molokai, MEYRICK, p. 258, Ent. Mag. xxxvi, n. sp.
- Scotosia multivagata* Hulst, referred to *Epirrhoë*, WARREN, p. 174, Nov. Zool. vii.
- S. interrupta*, p. 217, *inepta*, p. 218, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv, n. spp.
- Selenia*, hybrids, BARTEL, pp. 342-350, Ent. Nachr. xxvi.
- Selidosema fenerata*, early stages, HUDSON, p. 11, Tr. N. Zealand Inst. xxxii.
- S. petrozona*, Victoria, p. 35, *diagramma*, N. S. Wales, p. 36, LOWER, P. Linn. Soc. N. S. Wales xxv; *S. homopteroides*, N. America, HULST, p. 219, J. N. York Ent. Soc. viii; *S. delicatum*, California, HULST, p. 106, Canad. Ent. xxxii : n. spp.
- Semiorthisa combusta*, Costa Rica, p. 205, *ochrata*, *prælongata*, Dominica, p. 206, WARREN, Nov. Zool. vii; *S. regula*, p. 225, *parobditaria*, p. 226, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv : n. spp.
- Sewa* n. g. for *Abrazas orbiferata* Walk., SWINHOE, p. 591, Cat. Het. ii.

- Silabraxas* n. g. for *Abraxas lobata* Hamps., SWINHÖE, p. 305, t. c.  
*Siona* to be used in place of *Scoria*, PROUT, p. 215, Ent. Rec. xii.  
*Skorpiesthes* n. g. for *S. undascripta* n. sp., Queensland, LUCAS, p. 143, P. Soc. Queensland xv.  
*Somatina rubridisca*, Queensland, SWINHÖE, p. 376, Cat. Lep. Het. ii, n. sp.  
*Spargania approbata, colorifera*, Bolivia, WARREN, p. 182, Nov. Zool. vii, n. spp.  
*Spilocraspeda plana*, Bogotá, p. 223, *S. ? rufigrisea*, Ecuador, p. 224, WARREN, t. c, n. spp.  
*Stegania ruberata*, p. 736, *luteorubens*, p. 737, ? Madagascar, MABILLE, Ann. Soc. ent. France lxxviii, n. spp.  
*Stegotheca* n. g., p. 204, *Selidosemina*, for *S. amissa* n. sp., Ecuador, WARREN, p. 205, Nov. Zool. vii.  
*Stenalcidia pseudoculta*, p. 223, *binicola, micaya*, p. 224, *nigrilineata*, p. 225, Ecuador, DOGNIN, Ann. Soc. ent. Belgique xlv; *S. grisea*, Parana, *punctilineata*, Colombia, *venusta*, Ecuador, WARREN, p. 198, Nov. Zool. vii : n. spp.  
*Stenaspilates albidula*, N. America, HULST, p. 107, Canad. Ent. xxxii, n. sp.  
*Stenele ruberrima*, S. America, *tripuncta*, Amazons, WARREN, p. 193, Nov. Zool. vii, n. spp.  
*Stenopla* n. g. *Tephroclystiinae*, for *S. virescens* n. sp., Brazil, WARREN, p. 166, t. c.  
*Stenorrhoë* n. g. *Hydriomeninae*, for *S. longipennis* n. sp., Parana, WARREN, p. 183, t. c.  
*Sterria griseolineata*, Natal, WARREN, p. 94, t. c. n. sp.  
*Synchlora glaucaria*, life-history, DYAR, p. 93, Psyche ix.  
*Synecta duplicata*, Costa Rica, WARREN, p. 199, Nov. Zool. vii, n. sp.  
*Synelys pergracilis*, Florida, HULST, p. 105, Canad. Ent. xxxii, n. sp.  
*Syngria ? cinerea*, Venezuela, WARREN, p. 124, Nov. Zool. vii, n. sp.  
*Tachyphyle undilineata*, Demerara, WARREN, p. 140, t. c. n. sp.  
*Tanaorhinus argentifusa* Walk. (as *Geometra*), figure, pl. vi, fig. 4, SWINHÖE, Cat. Lep. Het. ii.  
*Tanaostyla conjunctiva*, Bogotá, WARREN, p. 129, Nov. Zool. vii, n. sp.  
*Taraxineura* n. g. near *Melanchroia*, p. 193, for *T. carbonaria* n. sp., Bogotá, p. 194, WARREN, t. c.  
*Telotheta* n. g., *Geometrina*, for *T. chlorostigma* n. sp., Venezuela, WARREN, p. 140, t. c.  
*Tephrinopsis rectilineata*, Argentina, WARREN, p. 206, t. c. n. sp.  
*Tephroclystia moderata* Walk. (as *Eupithecia*), pl. v, fig. 25, *semialbida*, fig. 16, *obliterata*, fig. 26, *perceptata*, fig. 17, *metaspilata*, fig. 27, SWINHÖE, Cat. Lep. Het. ii.  
*T. semicesia*, Syria, WARREN, p. 110, Nov. Zool. vii; *T. dentosa*, Ecuador, *fumimixta*, Costa Rica, *prelongata*, Chili, *purpureoviridis*, Ecuador, WARREN, p. 167, t. c. : n. spp.  
*Tephroclystis nebulosa*, larva and pupa, DYAR, p. 282, P. U. S. Mus. xxiii.  
*T. flebilis*, Alaska, HULST, p. 497, P. Washington Ac. ii; *T. insolabilis*, Arizona, *flebilis*, Alaska, HULST, p. 215, J. N. York Ent. Soc. viii; *T. plumbaria, bolterii*, p. 102, *lachrymosa, plenascripta, tenebrescens*, p. 103, N. America, HULST, Canad. Ent. xxxii : n. spp.  
*Tephronia ? oxygonaria*, Centr. Asia, PÜNGELER, pl. ix, fig. 16, p. 297, Deutsche ent. Zeitschr. Lep. xii, n. sp.  
*Tephrosia bistortata* and *crepuscularia* varr., distinctions, PROUT, pp. 9-11, Ent. Rec. xii.  
*Tetracis hyperborea*, Alaska, HULST, p. 220, J. N. York Ent. Soc. viii; *T. hyperborea*, Alaska, HULST, p. 496, P. Washington Ac. ii; *T. rufa*, Sao Paulo, WARREN, p. 224, Nov. Zool. vii : n. spp.  
*Tetragonodes rufata*, Ecuador, DOGNIN, p. 231, Ann. Soc. ent. Belgique xlv, n. sp.

- Thalassodes subreticulata*, Madagascar, MABILLE, p. 740, Ann. Soc. ent. France lxviii, n. sp.  
*T. albolineata*, Bismarck Arch., PAGENSTECHER, p. 156, Zoologica xxix ; *T. boliviensis*, Bolivia, DOGNIN, p. 215, Ann. Soc. ent. Belgique xlv : n. spp.  
*Thalera ostracites*, Madagascar, KARSCH, p. 370, Ent. Nachr. xxvi ; *T. pudica*, Bismarck Arch., PAGENSTECHER, p. 157, pl. ii, fig. 7, Zoologica xxix : n. spp.  
*Therina athasiaria*, life-history, DYAR, p. 10, Psyche ix ; *T. pullucidaria*, life-history, DYAR, p. 21, t. c.  
*T. lugubrosa*, p. 106, *leta*, p. 107, N. America, HULST, Canad. Ent. xxxii ; *T. ? nudata*, Ecuador, DOGNIN, p. 450, Ann. Soc. ent. Belgique xlv : n. spp.  
*Thysanopyga albopunctaria*, Ecuador, DOGNIN, p. 450, t. c. n. sp.  
*Tigridoptera cuneiplena*, Manilla, SWINHOE, p. 310, Cat. Lep. Het. ii, n. sp.  
*Tithraustes impleta*, Colombia, p. 129, *maerens*, with var. *condensata*, *picata*, with var. *intersecta*, Ecuador, p. 130, WARREN, Nov. Zool. vii, n. spp.  
*Tricentra* n. g., near *Rhodostrophia*, p. 164, for *T. flavimarginata* n. sp., Ecuador, p. 165, WARREN, t. c.  
*Trichogompha costimaculata*, Ecuador, WARREN, p. 186, t. c. n. sp.  
*Trichopleura achrolopha*, Centr. Asia, PÜNGELER, p. 299, pl. ix, fig. 20, Deutsche ent. Zeitschr. Lep. xii, n. sp.  
*Trichorrhages* n. g., p. 183, *Hydriomeninae*, for *T. umbrosa* n. sp., Colombia, p. 184, WARREN, Nov. Zool. vii.  
*Trochiodes inexpectata* var. n. *dilatata*, WARREN, p. 186, t. c.  
*Urepione conscripta*, Venezuela, WARREN, p. 224, t. c. n. sp.  
*Urolophus* n. g. for *Cidaria obscurata* Moore, etc., SWINHOE, p. 337, Cat. Lep. Het. ii.  
*Visiana* n. g. for *Scotosia sordidata* Moore, SWINHOE, p. 335, t. c.  
*Wauchula* n. g. near *Xystrota*, for *W. rubrotincta* n. sp., Florida, HULST, p. 216, J. N. York Ent. Soc. viii.  
*Xanthorhoe lychnota*, N. S. Wales, LOWER, p. 404, P. Linn. Soc. N. S. Wales xxv ; *X. fragilis*, Colombia, WARREN, p. 184, Nov. Zool. vii : n. spp.  
*Xanthoxena* n. g. *Dysphaniinae*, p. 130, for *X. imitans*, sp. n., Ecuador, p. 131, WARREN, t. c.  
*Xenocentris incolorata* var. n. *teniata*, WARREN, p. 109, t. c.  
*X. mimica*, Borneo, id. l. c., n. sp.  
*Xenosina* n. g., p. 114, near *Medasina*, for *X. detrita* n. sp., N. S. Wales, p. 115, WARREN, t. c.  
*Xenostigma* n. g. type *Ephyra perfusaria* Walk., WARREN, p. 165, t. c.  
*Zamarada crystallophana*, W. Africa, MABILLE, p. 741, Ann. Soc. ent. France lxviii, n. sp.  
*Zonosoma* ; characters of the species in conformity with ♂ genitalia, BASTELBERGER (79) ; *Z. punctaria* varr., FUCHS, p. 48, Jahrb. nassau. Ver. liii ; *Z. lenigiaria*, characters, antiquity, etc., BASTELBERGER, pp. 201-215, t. c.

## PYRALIDÆ and THYRIDIDÆ.

[Cf. BUCKLER (191), DRUCE (348), DUDGEON (352), FUCHS (474), HAMPSON (545, 546, 547), HOLLAND (595), HULST (623, 624, 626, 627), JOANNIS (662), KARSCH (676), LOWER (828, 829), LUCAS (832), MABILLE (843), MATSUMURA (867), PAGENSTECHER (975), REBEL (1073), REUTER (1104), SCHÜTZE (1169), SNELLEN (1250), STAUDINGER (1269, 1270), STITEZ (1285), SWINHOE (1298, 1299), WARREN (1374, 1375, 1376).]

Finland *Pyralida*, REUTER (1104).



- Acentropus newae*, note on, SCHÜTZE, p. 275, Deutsche ent. Zeitschr. Lep. xii.
- Acracoma* n. g. *Galleriinae*, p. 244, for *A. remipedalis* n. sp., W. Africa, p. 245, KARSCH, Ent. Nachr. xxvi.
- Acrobasis porphyrella*, larval habits, BROWN, p. xiii, Pr.-verb. Soc. Bordeaux.
- Acrocaula* n. g. near *Acrobasis*, p. 169, for *A. comacornella* n. sp., Texas, p. 170, HULST, Canad. Ent. xxxii.
- Actenia phœalis*, Algeria, pl. iii, fig. 25, *serratalis*, Amurland, HAMPSON, p. 383, Tr. ent. Soc. London 1900, n. spp.
- Agathodes? excisalis*, Argentina, SNELLEN, p. 277, pl. xv, figg. 11, 12, Tijdschr. Ent. xliii, n. sp.
- Aglossa rubralis*, Syria, *pulveralis*, Algeria, pl. iii, fig. 2, HAMPSON, p. 378, Tr. ent. Soc. London 1900, n. spp.
- Alutefa* n. g. for *Aediodes æqualis* Walk., SWINHOE, p. 457, pl. vii, fig. 9, Cat. Lep. Het. ii.
- Ambia instrumentalis* referred to *Musotima*, figured, pl. xvii, fig. 6, SNELLEN, p. 300, Tijdschr. Ent. xliii; *A. iriusalis*, fig., pl. vi, fig. 19, SWINHOE, Cat. Lep. Het. ii.
- Analthes eupilalis*, pl. viii, fig. 4, *A. hypsalis* Walk. (as *Eidama*), pl. vii, fig. 19, figg., SWINHOE, t. c.
- Ancylolomia westwoodi*, characters, SNELLEN, p. 305, pl. xvii, fig. 8, Tijdschr. Ent. xliii.
- Aphytoceros lucalis*, larval habits, ILLIDGE, p. 135, P. Soc. Queensland xv.
- Archernis ignealis*, fig., pl. viii, fig. 29, SWINHOE, Cat. Lep. Het. ii.
- Aripiana idalis* Walk. (as *Zebonia*), fig., pl. vii, fig. 16, SWINHOE, t. c.
- Arthroschista* n. g. for *Margaronia hilaralis* Walk., SWINHOE, p. 500, t. c.
- Arzama subcervinalis*, fig., pl. vi, fig. 11, SWINHOE, t. c.
- Aurora nigromaculella*, Arizona, HULST, p. 224, J. N. York Ent. Soc. viii; *A. nigrocinerella*, Texas, HULST, p. 176, Canad. Ent. xxxii: n. spp.
- Aziba substrigata*, Costa Rica, WARREN, p. 118, Nov. Zool. vii, n. sp.
- Banisa dohertyi* Warr. queried as *Ceratarcha*, SNELLEN, p. 276, Tijdschr. Ent. xliii.
- Benta floridella*, Florida, p. 221, *speciosella*, Arizona, p. 222, HULST, J. N. York Ent. Soc. viii, n. spp.
- Blabophanes rusticella*, arctic var., STRAND, p. 225, Ent. Nachr. xxvi.
- Blepharomastix tampiusalis* Walk. (as *Botys*), pl. viii, fig. 13, *insolitalis* Walk. (as *Astura*), fig. 31, *charesalis* Walk. (as *Botys*), fig. 19, *phaleasalis* Walk. (as *Botys*), fig. 21, figg., SWINHOE, Cat. Lep. Het. ii.
- Bocchoris lumeralis*, Buru, HOLLAND, p. 586, Nov. Zool. vii, n. sp.
- Bostra insignis, zonalis*, Madagascar, MABILLE, p. 742, Ann. Soc. ent. France lxviii, n. spp.
- Botys calatalis* Moore=(*chalybealis* Snell.), generic position discussed, SNELLEN, p. 269, Tijdschr. Ent. xliii; *B. nubilalis* var. n. *paulalis*, FUCHS, p. 71, Jahrb. nassau. Ver. liii; *B. sordidalis* Dew. referred to *Bradina*, KARSCH, p. 374, Ent. Nachr. xxvi.
- B. chrysopygalis, elvæsi*, Altai, STAUDINGER, p. 401, Deutsche ent. Zeitschr. Lep. xii; *B. triphœnalis*, Chili, p. 267, pl. xv, fig. 2, *vagalis*, Java, p. 268, fig. 3, SNELLEN, Tijdschr. Ent. xliii: n. spp.
- Calamochrous pallidalis*, Centr. Asia, HAMPSON, p. 391, Tr. ent. Soc. London 1900, n. sp.
- Camptochilus sinuosus*, pl. B, fig. 24, *furcifera*, fig. 4, figg., HAMPSON, p. 229, J. Bombay Soc. xiii.
- Canarsia gracilella*, New Jersey, HULST, p. 174, Canad. Ent. xxxii, n. sp.
- Cangetta hartoghialis* Snell. (as *Paraponyx*)=(*griseotalis* Hamp.), SNELLEN, p. 291, Tijdschr. Ent. xliii.
- C. muralis*, Java, SNELLEN, p. 292, t. c. n. sp.
- Caprinia conglobatalis*, fig., pl. vi, fig. 17, SWINHOE, Cat. Lep. Het. ii.
- Carthade cæcalis*, pl. xv, fig. 14, SNELLEN, Tijdschr. Ent. xliii.

- Catadysta argyrochrysalis*, Madagascar, MABILLE, p. 743, Ann. Soc. ent. France lxxviii; *C. l. phaeopteralis*, Brazil, p. 295, pl. xvii, figg. 11, 12, *harpalis*, Chiriqui, p. 296, fig. 1, SNELLEN, Tijdschr. Ent. xliii : n. spp.
- Catharia pyrenealis*, life-history, CHAPMAN, p. 75, Ent. Mag. xxxvi.
- Cerataarcha umbrosa* ♂, pl. xv, figg. 9, 10, p. 276, SNELLEN, Tijdschr. Ent. xliii.
- Chalcidoptera albotessulalis*, Madagascar, MABILLE, p. 744, Ann. Soc. ent. France lxxviii, n. sp.
- Chilo terrenellus*, Bismarck Arch., PAGENSTECHER, p. 160, Zoologica xxix, n. sp.
- Cirrhochrista disparalis* Walk. (as *Botys*), fig., pl. vi, fig. 13, SWINHOE, Cat. Lep. Het. ii.
- C. caconalis*, Queensland, pl. vi, fig. 28, p. 420, id. t. c.; *C. rauma*, Brisbane, SWINHOE, p. 313, Ann. Nat. Hist. vi; *C. trilinealis*, Bismarck Arch., PAGENSTECHER, p. 162, Zoologica xxix : n. spp.
- Cledeobia angustalis* var., FUCHS, p. 71, Jahrb. nassau. Ver. liii.
- C. chellatalis*, Algeria, p. 383, *amuralis*, pl. iii, fig. 32, p. 384, Amur, HAMPSON, Tr. ent. Soc. London 1900; *C. hamponsi*, Transcaspian, REBEL, p. 304, Ver. Ges. Wien I : n. spp.
- Clupeosoma polusalis*, fig., pl. vii, fig. 20, SWINHOE, Cat. Lep. Het. ii.
- Ctenostola eromenalis* referred to *Thysanoidma*, SNELLEN, p. 297, Tijdschr. Ent. xliii.
- Conchylodes privalis*, Java, SNELLEN, p. 282, pl. xvi, fig. 1, t. c. n. sp.
- Conogethes jubata*, Queensland, LUCAS, p. 152, P. Soc. Queensland xv, n. sp.
- Constantia atrisquamalis*, pl. iii, fig. 10, p. 378, *persinualis*, *sanctalis*, fig. 15, Syria, *caidalis*, Algeria, p. 379, *fuscipectalis*, *argentalis*, p. 380, *numidalis*, *canifusalis*, pl. iii, fig. 16, p. 381, Syria, *C. (Macrotentia) leucographalis*, Spain, *oxodontalis*, Centr. Asia, p. 382, HAMPSON, Tr. Ent. Soc. London 1900, n. spp.
- Coptobasis dentalis*, Bismarck Arch., PAGENSTECHER, p. 179, Zoologica xxix, n. sp.
- Crambidion* n. g. near *Crambus*, for *C. achroellum* n. sp., Madagascar, MABILLE, p. 748, Ann. Soc. ent. France lxxviii.
- Crambus hortuellus* var. n. *minimus*, p. 40, *biarmicus* var. n. *pallidus*, p. 41, STRAND, Arch. naturv. Christiania xxii, No. 5.
- C. nigroradians*, Comoro islands, MABILLE, p. 749, Ann. Soc. ent. France lxxviii; *C. serraticornis*, Syria, *dalmatinellus*, Lissa, p. 369, *osceellus*, Spain, *aridalis*, Transcaucasus, p. 370, *furciferalis*, pl. iii, fig. 17, *fulvifusalis*, Amurland, *cuencalis*, Spain, fig. 9, p. 371, *atrisquamalis*, Amurland, p. 372, HAMPSON, Tr. ent. Soc. London 1900; *C. zellerellus*, altaicus, Altai, STAUDINGER, p. 402, Deutsche ent. Zeitschr. Lep. xii : n. spp.
- Crossophora microthyrallis*, pl. xv, figg. 15, 16, p. 278, SNELLEN, Tijdschr. Ent. xliii.
- Culladia*, the systematic position, SNELLEN, pp. 303-306, Tijdschr. Ent. xliii.
- Cybolomia inglorialis*, Centr. Asia, HAMPSON, p. 392, Tr. ent. Soc. London 1900, n. sp.
- Cynæda dentalis furiosa* subsp. n., HAMPSON, p. 392, t. c.
- Diasemia latialis*, Turkestan, pl. iii, fig. 27, p. 390, HAMPSON, t. c. n. sp.
- Dichocrocis chioalis*, pl. viii, fig. 27, *nigrilinealis*, fig. 9, *megillalis*, fig. 2, figg., SWINHOE, Cat. Lep. Het. ii.
- D. tigridalis*, Madagascar, MABILLE, p. 745, Ann. Soc. ent. France lxxviii; *D. auritincta*, pl. ix, fig. 14, p. 74, HAMPSON, Monogr. Christ. Island : n. spp.
- Dichogama redtenbacheri*, early star

- Diplotyla javanalis*, p. 278, pl. xv, fig. 17, *quadralis*, p. 280, Java, SNELLEN, Tijdschr. Ent. xliii; *D. atrata*, Bismarck Arch., PAGENSTECHER, p. 182, pl. i, fig. 15, Zoologica xxix : n. spp.
- Diptychophora sinualis*, Armenia, p. 372, *strigatalis*, Amurland, pl. iii, fig. 23, p. 373, HAMPSON, Tr. ent. Soc. London 1900; *D. fuscobasella*, Java, SNELLEN, p. 301, pl. xvii, fig. 7, Tijdschr. Ent. xliii : n. spp.
- Dracanura versicolor*, Bismarck Arch., PAGENSTECHER, p. 177, pl. ii, fig. 36, Zoologica xxix, n. sp.
- Dyaria*; referred to *Pyralidæ*, nervuration, DYAR, p. 284, Canad. Ent. xxxii.
- Dysodia fenestratella*, E. Africa, WARREN, p. 90, Nov. Zool. vii; *D. bipuncta*, Perak, *lævis*, N. India, WARREN, p. 100, t. c. : n. spp.
- Edita icarusalis*, fig., pl. vi, fig. 21, SWINHÖE, Cat. Lep. Het. ii.
- Endotricha drancesalis* Walk. (as *Hydrocampa*), fig., pl. vii, fig. 18, SWINHÖE, t. c.
- E. jordana*, Syria, HAMPSON, p. 377, Tr. ent. Soc. London 1900; *E. erythralis*, Madagascar, MABILLE, p. 742, Ann. Soc. ent. France lxxviii; *E. listeri*, pl. ix, fig. 3, p. 73, HAMPSON, Monogr. Christmas Island; *E. buralis*, Buru, HOLLAND, p. 582, Nov. Zool. vii; *E. gregalis*, Bismarck Arch., PAGENSTECHER, p. 168, Zoologica xxix : n. spp.
- Entephria tylostegalis*, Amurland, HAMPSON, pl. iii, fig. 6, p. 385, Tr. ent. Soc. London 1900; *E. 7-notata*, Madagascar, MABILLE, p. 743, Ann. Soc. ent. France lxxviii; *E. sarumalis*, Buru, HOLLAND, p. 585, Nov. Zool. vii; *E. fulvomarginalis*, Bismarck Arch., PAGENSTECHER, p. 181, Zoologica xxix : n. spp.
- Eoöphyla* n. g. for *Cataclysta peribocalis* Walk. and *E. waigoalis* n. sp., Waigiu, pl. vi, fig. 29, p. 442, SWINHÖE, Cat. Lep. Het. ii.
- Epena* n. g. *Pyralidina*, p. 245, for *E. elephantinalis* n. sp., Cameroons, p. 246, KARSCH, Ent. Nachr. xxvi.
- Ephestia cautella*, natural history, ZEHNTNER, pp. 24–26, pl. i, figg. 14–16, Pflanzenhuizen x.
- E. scotella*, Christmas Is., HAMPSON, p. 72, pl. ix, fig. 13, Monogr. Christmas Island, n. sp.
- Ephesiodes nigrella*, California, HULST, p. 224, J. N. York Ent. Soc. viii, n. sp.
- Erilita metaleucalis* Walk. (as *Bradina*), figure, pl. vi, fig. 27, SWINHÖE, Cat. Lep. Het. ii.
- Eromene virescens*, Arizona, HULST, p. 225, J. N. York. Ent. Soc. viii, n. sp.
- Erupe gigantea*, gyges, *cluaca*, *rhatia*, Colombia, DRUCE, p. 526, Ann. Nat. Hist. v, n. spp.
- Ethopia roseilinea*, figure, SWINHÖE, p. 416, Cat. Lep. Het. ii.
- Eufernaldia* n. g. *Crambida*, for *E. argenteonervella* n. sp., Arizona, HULST, p. 224, J. N. York Ent. Soc. viii.
- Eugauria* n. g. near *Cataclysta*, p. 290, for *E. compactalis* n. sp., Java, p. 291, pl. xvi, fig. 10, SNELLEN, Tijdschr. Ent. xliii.
- Eurycreon evermanni* = (*Spilodes bicoloralis* Warr.), SNELLEN, p. 270, t. c.
- Eurythmia coloradella*, N. America, HULST, p. 175, Canad. Ent. xxxii, n. sp.
- Eusabena* n. g. near *Pachynoa*, p. 271, for *E. setinalis* n. sp., Borneo, p. 272, pl. xv, figg. 4, 5, SNELLEN, Tijdschr. Ent. xliii.
- Eustacia pupula*, larva, DYAR, p. 155, Canad. Ent. xxxii.
- Eutrichotis* n. g. for *Zebonia abraxalis* Walk., SWINHÖE, p. 453, Cat. Lep. Het. ii.
- Euzophera inornatella*, New Jersey, HULST, p. 173, Canad. Ent. xxxii, n. sp.
- Evergestis lichenalis*, Centr. Asia, pl. iii, fig. 20, p. 387, HAMPSON, Tr. ent. Soc. London 1900, n. sp.

- Galadra rhomboidata*, figure, pl. vii, fig. 6, SWINHOE, Cat. Lep. Het. ii.  
*Galleria mellonella*, *alvearia*, habits of larvæ, KAEMPF (669).  
*Glaucoda* n. g. *Hydrocampinæ*, p. 247, for *G. transparentalis*, p. 248, n. sp., W. Africa, KARSCH, Ent. Nachr. xxvi.  
*Glyphandra* n. g. *Hydrocampinæ*, for *G. biincisalis* n. sp., W. Africa, KARSCH, p. 249, t. c.  
*Glyphodes* spp. larval habits in Queensland, ILLIDGE, P. Soc. Queensland xv, pp. 133, 134.  
*G. desmialis*, *malgassalis*, Madagascar, MABILLE, p. 746, Ann. Soc. ent. France lxviii; *G. (Phacellusa) holophæalis*, Christmas Is., HAMPSON, p. 74, pl. ix, fig. 11, Monogr. Christmas Island; *G. subcameralis*, Bismarck Arch., PAGENSTECHER, p. 213, Zoologica xxix : n. spp.  
*Goniorhynchus guilielmalis*, Buru, HOLLAND, p. 587, Nov. Zool. vii, n. sp.  
*Haitufa* n. g. for *Botys fabiusalis* Walk., pl. vii, fig. 7, SWINHOE, p. 491, Cat. Lep. Het. ii.  
*Hedylepta vildersalis*, Cherra Punji, SWINHOE, p. 313, Ann. Nat. Hist. vi, n. sp.  
*Herculia productalis*, figure, pl. vi, fig. 24, SWINHOE, Cat. Lep. Het. ii.  
*Heterocnephæ rotundalis*, Borneo, SNELLEN, p. 274, pl. xv, fig. 8, Tijdschr. Ent. xliii, n. sp.  
*Heterographis arizonella*, N. America, HULST, p. 222, J. N. York Ent. Soc. viii, n. sp.  
*Homura erythæa*, Colombia, DRUCK, p. 527, Ann. Nat. Hist. v, n. sp.  
*Honora fumosella*, N. America, HULST, p. 175, Canad. Ent. xxxii; *H. dulciella*, Florida, *cinereella*, *luteella*, Arizona, HULST, p. 223, J. N. York Ent. Soc. viii : n. spp.  
*Hoterodes sericealis*, Bismarck Arch., PAGENSTECHER, p. 184, Zoologica xxix, n. sp.  
*Hvidode* n. g. for *Margarodes* Guen., SWINHOE, p. 499, Cat. Lep. Het. ii.  
*Hydrocampa stagnalis* var., KAYE, p. xviii, P. ent. Soc. London 1900.  
*H. lipocosmalis*, Java, SNELLEN, p. 286, pl. xvi, figg. 4, 5, Tijdschr. Ent. xliii, n. sp.  
*Hypanchyla devialis* Walk. (as *Pyralis*), figure, pl. vii, fig. 8, SWINHOE, Cat. Lep. Het. ii.  
*Hypolamprus parisignata*, Surinam, WARREN, p. 118, Nov. Zool. vii, n. sp.  
*Hypsostrophæ costella*, Bismarck Arch., PAGENSTECHER, p. 163, Zoologica xxix, n. sp.  
*Irgilla* n. g. for *Rhodaria nypsiusalis* Walk., SWINHOE, p. 532, Cat. Lep. Het. ii.  
*Isocentris subauroralis*, Bismarck Arch., PAGENSTECHER, p. 218, pl. ii, fig. 28, Zoologica xxix, n. sp.  
*Iza multifasciata*, p. 118, *rosenbergi*, Ecuador, *rufigrisea*, Venezuela, p. 119, WARREN, Nov. Zool. vii, n. spp.  
*Jocara (Toripalpus) dentilinella*, Arizona, HULST, p. 221, J. N. York Ent. Soc. viii, n. sp.  
*Lepidoneura grisealis*, Kuldja, pl. iii, fig. 24, p. 391, HAMPSON, Tr. ent. Soc. London 1900, n. sp.  
*Lodiana albicostalis*, Syria, HAMPSON, p. 375, t. c. n. sp.  
*Lotanga anigrusalis* Walk. (as *Botys*), pl. vi, fig. 26, *confixalis*, pl. viii, fig. 18, figures, SWINHOE, Cat. Lep. Het. ii.  
*Lygropia sinonalis*, pl. viii, fig. 17, *propinquialis*, fig. 22, figures, SWINHOE, t. c.  
*L. leucophanalis*, Madagascar, MABILLE, p. 746, Ann. Soc. ent. France lxviii; *L. holoxanthalis*, Buru, HOLLAND, p. 588, Nov. Zool. vii : n. spp.  
*Macalla lophotalis*, Armenia, p. 375, *amurensis*, Ussuri, pl. iii, fig. 1, p. 376, HAMPSON, Tr. ent. Soc. London 1900, n. spp.  
*Margurodes flegia*, life-history, DYAR, p. 117, Canad. Ent. xxxii



- Margaronia phytionalis* Walk. (as *Botys*), figure, pl. viii, fig. 10, SWINHOE, Cat. Lep. Het. ii.
- Maricopa albocostella*, N. America, HULST, p. 176, Canad. Ent. xxxii, n. sp.
- Meca* n. g. *Pyralidinae* near *Tegulifera*, for *M. astralis* n. sp., W. Africa, KARSCH, p. 372, Ent. Nachr. xxvi.
- Megasis cinctella*, California, HULST, p. 172, Canad. Ent. xxxii, n. sp.
- Melissoblastes rufovenalis*, characters, SNELLEN, p. 307, Tijdschr. Ent. xliii; *M. obtiterosa* Walk. (as *Bapara*), figure, pl. vii, fig. 2, SWINHOE, Cat. Lep. Het. ii.
- M. eucheliellus*, Java, SNELLEN, p. 308, pl. xvii, fig. 9, Tijdschr. Ent. xliii; *M. burellus*, Buru, HOLLAND, p. 581, Nov. Zool. vii : n. spp.
- Melitara juncolineella*, N. America, HULST, p. 173, Canad. Ent. xxxii, n. sp.
- Metasia albicostalis*, p. 392, *sancta*, p. 393, Syria, HAMPSON, Tr. ent. Soc. London 1900, n. spp.
- Metaxis vorax*, Congo, in nest of *Dasychira goodi*, JOANNIS, p. 282, Bull. Mus. Paris 1900, n. sp.
- Microtenucha* n. g. *Thyrididae*, for *Rhodoneura munda* Hamps., WARREN, p. 100, Nov. Zool. vii.
- Midila halia*, Colombia, DRUCE, p. 525, Ann. Nat. Hist. v, n. sp.
- Mineola scitulella*, *rubescensella*, N. America, HULST, p. 169, Canad. Ent. xxxii, n. sp.
- Mixophila apicalis*, Bismarck Arch., PAGENSTECHER, p. 172, Zoologica xxix, n. sp.
- Monoptilota* n. g., p. 13, near *Ceara* Rag., for *M. nubilella* n. sp., N. America, p. 14, HULST, Canad. Ent. xxxii.
- Morocosma nitidaria*, Bismarck Arch., PAGENSTECHER, p. 214, pl. i, fig. 2, Zoologica xxix, n. sp.
- Mucialla? fuscolimbalis*, Java, SNELLEN, p. 308, pl. xvii, figg. 10, 11, Tijdschr. Ent. xliii, n. sp.
- Musotima fuscalis*, p. 298, pl. xvii, figg. 2, 3, *decoralis*, p. 299, figg. 4, 5, Java, SNELLEN, t. c. n. sp.
- Myelois dulciella*, Florida, HULST, p. 176, Canad. Ent. xxxii, n. sp.
- Nacoleia marionalis*, figure, pl. vii, fig. 11, SWINHOE, Cat. Lep. Het. ii.
- N. dnopheralis*, Madagascar, MABILLE, p. 745, Ann. Soc. ent. France lxviii, n. sp.
- Nephopteryx pirivorella*, Japan, MATSUMURA, p. 193, Ent. Nachr. xxvi;
- N. nigrostriatella*, *bistriella*, *violetta*, Bismarck Arch., PAGENSTECHER, Zoologica xxix; *N. modestella*, Massachusetts, HULST, p. 170, Canad. Ent. xxxii : n. spp.
- Neoschanobia* n. g. *Schanobiana*, for *N. testacealis* n. sp., Amurland, HAMPSON, p. 374, Tr. ent. Soc. London 1900.
- Noctuelia anemicalis*, Algeria, *arcuatalis*, Samarkand, pl. iii, fig. 28, HAMPSON, p. 400, t. c.; *N. togoalis*, W. Africa, KARSCH, p. 377, Ent. Nachr. xxvi : n. spp.
- Nomophila noctuella* var., FUCHS, p. 72, Jahrb. nassau. Ver. liii.
- Nosophora chironalis*, figure, pl. viii, fig. 26, SWINHOE, Cat. Lep. Het. ii.
- Nothosablia* n. g. for *Salbia straminealis*, SWINHOE, p. 471, t. c.
- Odematarcha* n. g. for *Botys xipharesalis* Walk., SWINHOE, p. 476, pl. viii, fig. 30, t. c.
- Oligostigma arcualis*, swarming, HAMPSON, p. x, P. ent. Soc. London 1900.
- O. falcatalis*, p. 287, pl. xvi, figg. 7, 8, *excisalis*, p. 289, fig. 9, Java, SNELLEN, Tijdschr. Ent. xliii : n. spp.
- Omiodes blackburni*, larva, DYAR, p. 157, Canad. Ent. xxxii.
- Orobena extimalis* var., FUCHS, p. 73, Jahrb. nassau. Ver. liii.
- O. spiniferalis*, Centr. Asia, STAUDINGER, p. 347, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Orphnophanes strigatalis*, Bismarck Arch., PAGENSTECHER, p. 178, pl. i, fig. 16, Zoologica xxix, n. sp.

- Pachyzancla atropunctalis*, *griseolineata*, Madagascar, MABILLE, p. 747, Ann. Soc. ent. France lxxviii, n. spp.
- Pagda poeasalis*, figure, pl. vii, fig. 24, SWINHOE, Cat. Lep. Het. ii.
- P. furcatalis*, New Guinea, pl. vii, fig. 12, *holonalis*, Borneo, fig. 22, p. 460, id. t. c.; *P. nitidalis*, Bismarck Arch., PAGENSTECHEB, p. 194, Zoologica xxix : n. spp.
- Parbokla* n. g. for *Phryganodes diffusimarginalis* Hamps., SWINHOE, p. 476, Cat. Lep. Het. ii.
- Paredra rigidalis*, Java, SNELLEN, p. 265, pl. xv, fig. 1, Tijdschr. Ent. xliii, n. sp.
- Parthenodes sutschana*, Amurland, HAMPSON, p. 384, Tr. ent. Soc. London 1900, n. sp.
- Parudea* n. g. *Crocidophora* group, for *P. fimbriata* n. sp., N. China, pl. viii, fig. 34, SWINHOE, p. 523, Cat. Lep. Het. ii.
- Passadena* n. g. *Phycitidæ*, for *P. constantella* n. sp., California, HULST, p. 171, Canad. Ent. xxxii.
- Pelina trilinealis* Walk. (as *Zebonia*), figure, pl. vii, fig. 10, SWINHOE, Cat. Lep. Het. ii.
- Peoria albidella*, California, HULST, p. 175, Canad. Ent. xxxii, n. sp.
- Perula* n. g. *Endotrichinæ*, p. 741, for *P. æsopialis* n. sp., Madagascar?, p. 742, MABILLE, Ann. Soc. ent. France lxxviii.
- Phlyctenodes leucalis*, pl. iii, fig. 14, Caucasus, *straminealis*, Asia Minor, fig. 22, p. 388, *phæoneuralis*, Siberia, fig. 12, *rhabdalis*, fig. 4, Centr. Asia, p. 389, *subhyalinalis*, Syria, India, *foviferalis*, India, p. 390, HAMPSON, Tr. ent. Soc. London 1900, n. spp.
- Phryganodes*; characters and synonymical notes of W. African, KARSCH, pp. 375-377, Ent. Nachr. xxvi.
- P. autongilensis*, Madagascar, MABILLE, p. 744, Ann. Soc. ent. France lxxviii; *P. baratalis*, Buru, HOLLAND, p. 586, Nov. Zool. vii : n. spp.
- Piletocera illectalis*, pl. viii, fig. 21, *latulis*, pl. vii, fig. 15, *basalis*, fig. 25, *tellesalis*, pl. viii, fig. 14, *lycopusalis*, pl. vii, fig. 23, *zebrinalis*, fig. 13, figures, SWINHOE, Cat. Lep. Het. ii.
- Pilocrosis contortalis*, Amurland, pl. iii, fig. 11, p. 387, HAMPSON, Tr. ent. Soc. 1900, n. sp.
- Pionea turiusalis*, pl. viii, fig. 7, *placens*, fig. 12, figures, SWINHOE, Cat. Lep. Het. ii.
- P. ferrealis*, Amurland, pl. iii, fig. 19, p. 394, *perfervidalis*, Syria, fig. 3, *vestalis*, *albescentalis*, Armenia, *albifuscalis*, Turkestan, fig. 31, p. 395, *leucocephalis*, Centr. Asia, fig. 7, p. 396, HAMPSON, Tr. ent. Soc. London 1900; *P. rufesolalis*, Madagascar, MABILLE, p. 747, Ann. Soc. ent. France lxxviii : n. spp.
- Pitacanda maculalis* Walk. (as *Botys*), figure, pl. vii, fig. 1, SWINHOE, Cat. Lep. Het. ii.
- Platytes leucopleuralis*, Madagascar, MABILLE, p. 748, Ann. Soc. ent. France lxxviii, n. sp.
- Plectrona orientalis*, Borneo, SNELLEN, p. 273, pl. xv, figg. 6, 7, Tijdschr. Ent. xliii, n. sp.
- Pleurotypa mysotalis* Walk. (as *Botys*), pl. viii, fig. 5, *quadriguttalis*, fig. 24, figures, SWINHOE, Cat. Lep. Het. ii.
- Polygrammodes tapsusalis*, figure, pl. viii, fig. 33, SWINHOE, t. c.
- Pramadea curiusalis* Walk. (as *Botys*), figure, pl. viii, fig. 1, SWINHOE, t. c.
- Prorodes leucothyralis*, Madagascar, MABILLE, p. 746, Ann. Soc. ent. France lxxviii, n. sp.
- Psara fulgidalis*, Bismarck Arch., PAGENSTECHEB, p. 217, Zoologica xxix, n. sp.
- Psorosu texanella*, N. America, HULST, p. 174, Canad.
- Pyralis admetalis* Walk., cf. *Noctuida*, *Tura*

- Pyrausta ciniferalis*, pl. viii, fig. 6, *rhypheusalis*, fig. 20, figures, SWINHOE, Cat. Lep. Het. ii.
- P. furcicollalis*, Amurland, *ecteinulalis*, Turkestan, p. 396, *discimaculalis*, Amurland, *griseofumalis*, Ordubad, p. 397, *cœnalis*, Amurland, *pachyceralis*, Armenia, pl. iii, fig. 26, *russulatalis*, Centr. Asia, p. 398, *catilualis*, Algeria, p. 399, HAMPSON, Tr. ent. Soc. London 1900; *P. semilimbialis*, Madagascar, MABILLE, p. 748, Ann. Soc. ent. France lxxviii; *P. aurifusalis*, Sula, pl. viii, fig. 25, p. 536, *kenalis*, India, fig. 28, p. 538, SWINHOE, Cat. Lep. Het. ii; *P. cajelalis*, Buru, HOLLAND, p. 590, Nov. Zool. vii : n. spp.
- Rhimphalea heraniialis*, pl. vii, fig. 17, *splendidialis*, fig. 27, figures, SWINHOE, Cat. Lep. Het. ii.
- Rhodoneura albiferalis*, figure, pl. vi, fig. 12, SWINHOE, t. c.
- R. furcifer*, India and Australia, HAMPSON, p. 230, J. Bombay Soc. xiii; *R. phasianalis*, New Guinea, SWINHOE, p. 411, pl. vi, fig. 14, Cat. Lep. Het. ii; *R. latifasciata*, Bismarck Arch., PAGENSTECHER, p. 39, Zoologica xxix; *R. melialis*, Queensland, SWINHOE, p. 312, Ann. Nat. Hist. vi : n. spp.
- Sacada decora*, figure, pl. vi, fig. 15, SWINHOE, Cat. Lep. Het. ii.
- S. rubralis*, Buru, HOLLAND, p. 583, Nov. Zool. vii, n. sp.
- Salebria slosonella*, *afflictella*, p. 170, *nigricans*, *lacteella*, p. 171, N. America, HULST, Canad. Ent. xxxii, n. spp.
- Salma sagarisalis* Walk. (as *Locastra*), figure, pl. vi, fig. 23, SWINHOE, Cat. Lep. Het. ii.
- Sarasota* n. g. near *Myelois*, for *S. plumigerella* n. sp., Florida, HULST, p. 222, J. N. York Ent. Soc. viii.
- Sarata cinereella*, Colorado, HULST, p. 172, Canad. Ent. xxxii, n. sp.
- Saroscelis nicoalis*, figure, pl. viii, fig. 13, SWINHOE, Cat. Lep. Het. ii.
- Scirpophaga auriflua*, habits, p. 43, pl. vi, figg. 1, 2, Ind. Mus. Notes v.
- S. fulvilinealis*, Armenia, HAMPSON, p. 374, Tr. ent. Soc. London 1900, n. sp.
- Scoparia atomalis*, *basistrigalis*, *ulmella*, *ambigualis*, distinctions, KNAGGS, pp. 109–116, cuts, Entomologist xxxiii.
- S. sisanae*, N. S. Wales, LOWER, p. 38, P. Linn. Soc. N. S. Wales xxv; *S. mesogramma*, N. S. Wales, LOWER, p. 408, t. c. : n. spp.
- Sedenia zeroscopa*, p. 37, *polydesma*, p. 38, N. S. Wales, LOWER, t. c. n. spp.
- Selagia australella*, Texas, HULST, p. 174, Canad. Ent. xxxii, n. sp.
- Sindris leucotriangula*, Madagascar?, MABILLE, p. 743, Ann. Soc. ent. France lxxviii, n. sp.
- Stemmatophora patagiialis*, W. Africa, KARSCH, p. 373, Ent. Nachr. xxvi, n. sp.
- Stenia prastichalis* Led. queried as *Cataclysta*, SNELLEN, p. 293, pl. xvii, fig. 13, Tijdschr. Ent. xliii.
- S. ferrealis*, Armenia, *flavipunctalis*, Spain, pl. iii, fig. 8, HAMPSON, p. 385, Tr. ent. Soc. London 1900, n. spp.
- Stenicula* n. g. near *Stenia*, p. 284, for *S. flavicaput* n. sp., Java, pl. xvi, figg. 2, 3, p. 285, SNELLEN, Tijdschr. Ent. xliii.
- Stenocopsis* n. g. near *Mathoris*, p. 119, for *S. albiapicata* n. sp., Orinoco, p. 120, WARREN, Nov. Zool. vii.
- Stericta incrustalis*, early stages, DYAR, p. 283, P. U. S. Mus. xxiii.
- S. aribasalis*, Amurland, HAMPSON, Tr. ent. Soc. London 1900, p. 376; *S. corticalis*, Bismarck Arch., PAGENSTECHER, p. 167, pl. ii, fig. 23, Zoologica xxix : n. spp.
- Strepsinoma crasusalis* Walk. (as *Cataclysta*), figure, pl. vii, fig. 14, SWINHOE, Cat. Lep. Het. ii.
- Striglina rufitibia* redescribed, WARREN, p. 120, Nov. Zool. vii.
- Sylepta hemichionalis*, p. 745, *rubrifucalis*, p. 746, Madagascar, MABILLE,

- Ann. Soc. ent. France lxxiii; *S. benedictalis*, Buru, HOLLAND, p. 588, Nov. Zool. vii : n. spp.
- Sylora* n. g. for *Sisyrophora cirralis* Sw., SWINHOE, p. 472, Cat. Lep. Het. ii.
- Symmoracma minoralis* Snell. (as *Auxomitia*) = (*Stenia profanalis* Hamp. = *spodinopa* Meyrick), SNELLEN, p. 271, Tijdschr. Ent. xliii.
- Syngamia luteofusalis, longicornalis*, Madagascar, MABILLE, p. 744, Ann. Soc. ent. France lxxviii, n. spp.
- Tubidia aculealis*, figure, pl. vii, fig. 26, SWINHOE, Cat. Lep. Het. ii.
- T. strigiferalis*, Amurland, pl. iii, fig. 30, p. 386, HAMPSON, Tr. ent. Soc. London 1900, n. sp.
- Talis menetriesi*, pl. iii, fig. 13, p. 373, *pallidalis*, fig. 21, p. 374, Centr. Asia, HAMPSON, t. c.; *T. chamylella*, Thian Schan, STAUDINGER, p. 346, Deutsche ent. Zeitschr. Lep. xii : n. spp.
- Tungla* n. g. for *Glyphodes zangisalis* Walk., pl. viii, fig. 11, SWINHOE, p. 501, Cat. Lep. Het. ii.
- Tegostoma paralis*, Turkestan, p. 391, *albizonalis*, Armenia, p. 400, HAMPSON, Tr. ent. Soc. London 1900, n. spp.
- Tetralopha formosella*, Texas, HULST, p. 169, Canad. Ent. xxxii, n. sp.
- Theila* n. g. for *Oligostigma gibbosulis* Guen., SWINHOE, p. 443, Cat. Lep. Het. ii.
- Titanio hesperialis*, pl. iii, fig. 5, p. 393, *metaxanthalis*, fig. 29, p. 394, Centr. Asia, HAMPSON, Tr. ent. Soc. London 1900, n. spp.
- Triphassa victorialis*, Cameroons, KARSCH, p. 247, Ent. Nachr. xxvi, n. sp.
- Tyspanodes exathesalis*, figure, pl. vi, fig. 16, SWINHOE, Cat. Lep. Het. ii.
- Utiocome* n. g. for *Margaronia diaphanalis* Walk., SWINHOE, p. 472, t. c.
- Ulopeza innotalis*, W. Africa, KARSCH, p. 374, Ent. Nachr. xxvi; *U. crocifrontalis*, Madagascar, MABILLE, p. 744, Ann. Soc. ent. France lxxviii : n. spp.
- Ulotricha algerialis*, Biskra, HAMPSON, pl. iii, fig. 18, p. 377, Tr. ent. Soc. London 1900, n. sp.
- Urula* n. g. *Phycitidæ*, for *U. incongruella* n. sp., California, HULST, p. 175, Canad. Ent. xxxii.
- Vüessa hieratica*, Borneo, SWINHOE, p. 430, pl. vi, fig. 22, Cat. Lep. Het. ii; *V. sarumensis*, Buru, HOLLAND, p. 582, Nov. Zool. vii : n. spp.
- Zeuzerodes argentistriata*, Venezuela, WARREN, p. 121, t. c. n. sp.
- Zinckenia nigerrimalis*, Christmas Is., HAMPSON, p. 73, pl. ix, fig. 10, Monogr. Christmas Island, n. sp.
- Zophodia epischnioides, fuscatella*, N. America, HULST, p. 173, Canad. Ent. xxxii, n. spp.

## TORTRICIDÆ.

[Cf. BUCKLER (191), DYAR (360), JOANNIS (661), KENNEL (690), LOWER (829), MATSUMURA (867), MABILLE (843), PAGENSTECHER (975), PETERSEN (993), REUTER (1104), STAUDINGER (1269), STITZ (1285), WALSINGHAM & DURRANT (1298), WALSINGHAM (1365, 1366, 1367, 1370).]

Revision of nomenclature of *Microlepidoptera* continued, WALSINGHAM & DURRANT, Ent. Mag. xxxvi, pp. 4 etc.

Finland *Tortricidæ*, REUTER (1104).

The male genitalia of *Tortrix viridana*, STITZ (1285).

*Idoxophyes fasciata*, E. Asia, WALSINGHAM, p. 482, Ann. Nat. Hist. v, n. sp.

*Anatropia pentacosma*, S. Australia, LOWER, p. 409, P. Linn. Soc. N. S. Wales xxv, n. sp.

*Ancylis latipennis*, Japan, p. 439, *mandarinana*, China, etc., p. 440, WALSINGHAM, Ann. Nat. Hist. vi, n. spp.



- Anomalopteryx* n. g. *Epiblemidae* for *A. xylinana* n. sp., Amur, pl. v, figg. 33-35, KENNEL, p. 157, Deutsche ent. Zeitschr. Lep. xiii.
- Argyroploce basipunctana*, *lactefacies*, p. 236, *auricristana*, *geminata*, p. 237, Japan, *A. ? catapittoma*, China, p. 239, *inornata*, p. 240, *major*, *oborata*, p. 241, *humeralis*, p. 242, Japan, WALSINGHAM, Ann. Nat. Hist. vi, n. spp.
- Argyroploce dimidiata* Cl. = (*schreberiana* L.), WALSINGHAM, p. 235, t. c.
- Archips luticostanus* Chr. = (*gigantana* Kennel), WALSINGHAM, p. 443, t. c.
- A. inornatus*, Corea, p. 442, WALSINGHAM, Ann. Nat. Hist. vi; *A. ? socotranus*, Sokotra, WALSINGHAM, p. 7, Bull. Liverp. Mus. iii; *A. ? longicellanus*, Japan, p. 378, *asiaticus*, p. 380, *breviplicatus*, Corea, *adumbratanus*, p. 382, *fuscocupreanus imitator*, p. 384, Japan, WALSINGHAM, Ann. Nat. Hist. v; *A. mimicus*, India, WALSINGHAM, p. 573, Swinhoe, Cat. Lep. Het. ii : n. spp.
- Atelodora agramma*, S. Australia, LOWER, p. 408, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Atychia fasciata*, Thian Schan, pl. vii, fig. 10, p. 349, *fallax*, Fergana, p. 350, *radiolata*, Saisan, p. 351, STAUDINGER, Deutsche ent. Zeitschr. Lep. xii, n. sp.
- Bactra roseana*, Japan, WALSINGHAM, p. 334, Ann. Nat. Hist. vi; *B. punctistrigana*, *distictana*, Madagascar, MABILLE, p. 751, Ann. Soc. ent. France lxviii : n. spp.
- Batodes angustiorana*, larval food, BANKES, p. 9, Ent. Mag. xxxvi.
- Brachmia medjella*, Alps, CHRÉTIEN, p. 191, Bull. Soc. ent. France 1900, n. sp.
- Brachygonia* n. g. near *Tortrix*, for *B. angulicostana*, n. sp., Japan, WALSINGHAM, p. 464, Ann. Nat. Hist. v.
- Cacoecia gigantana*, Askold, KENNEL, p. 127, pl. v, fig. 2, Deutsche ent. Zeitschr. Lep. xiii, n. sp.
- Cenognosis* n. g. near *Epalxiphora*, for *C. incisa*, n. sp., Christmas Is., WALSINGHAM, p. 79, Monogr. Christmas Island.
- Capua* Steph. = (*Homona* Walk.), WALSINGHAM, p. 575, Swinhoe, Cat. Lep. Het. ii.
- Carposina sasakii*, Japan, MATSUMURA, p. 198, Ent. Nachr. xxvi; *C. niponensis*, Japan, WALSINGHAM, p. 121, Ann. Nat. Hist. vi : n. spp.
- Cochylis blandana* (Ev. as *Sciaphila*) = (*punctulatana* Kenn.), KENNEL, p. 306, Deutsche ent. Zeitschr. Lep. xii.
- Conchylis helvolana* n. n. for *dilutana* K. nec Wals., KENNEL, p. 159, Deutsche ent. Zeitschr. Lep. xiii.
- C. subobscurana*, Puli Hatum, pl. v, fig. 5, p. 129, *luteopictana*, Schahkuh, fig. 6, *prangana*, Caucasus, fig. 7, p. 130, KENNEL, Deutsche ent. Zeitschr. Lep. xiii; *C. unicolorana*, Madagascar, MABILLE, p. 750, Ann. Soc. ent. France lxviii; *C. vanillana*, Réunion, JOANNIS, p. 263, Bull. Soc. ent. France 1900 : n. spp.
- Crociosema demutata*, Japan, WALSINGHAM, p. 441, Ann. Nat. Hist. vi, n. sp.
- Cryptaspasma* n. g. for *Penthina lugubris* F. & R., WALSINGHAM, p. 462, Ann. Nat. Hist. v.
- Cryptophlebia ? socotrensis*, Sokotra, WALSINGHAM, p. 6, Bull. Liverp. Mus. iii, n. sp.
- Dichelia precana*, Witim, KENNEL, p. 125, pl. v, fig. 1, Deutsche ent. Zeitschr. Lep. xiii, n. sp.
- Doloploca praviella* Ersch., characters, fig., KENNEL, p. 128, pl. v, fig. 4, t. c.
- D. lineata*, Palestine, WALSINGHAM, p. 462, Ann. Nat. Hist. v, n. sp.
- Dudua hesperialis* Walk., characters, WALSINGHAM, p. 134, op. cit. vi.
- Enarmonia infausta*, p. 438, *cristata*, p. 439, Japan, WALSINGHAM, t. c. n. spp.

- Epagoge angustilineata*, *minuta*, p. 484, *E. ? calvicaput*, p. 485, Japan, WALSINGHAM, Ann. Nat. Hist. v, n. spp.
- Epagoge halsysideta*, Christmas Is., WALSINGHAM, p. 78, Monogr. Christmas Island, n. sp.
- Epiblema subterminana* Ersch., characters, fig., KENNEL, p. 150, pl. v, fig. 26, Deutsche ent. Zeitschr. Lep. xiii.
- E. ravana*, pl. v, fig. 27, p. 151, *muculiferana*, fig. 28, p. 152, Guberli, KENNEL, t. c. n. spp.
- Eucelis vulnerata*, Tenasserim, WALSINGHAM, p. 571, Swinhoe, Cat. Lep. Het. ii; *E. ? falcana*, *E. ochreocervina*, p. 407, *E. ? divisa*, p. 408, Japan, WALSINGHAM, Ann. Nat. Hist. vi : n. spp.
- Eucosma pica*, p. 337, *pryerana*, p. 338, *E. ? macrorris*, p. 339, *E. inconspicua*, p. 340, Japan, WALSINGHAM, Ann. Nat. Hist. vi, n. spp.
- Euxanthis romanovi*, Thian Chan, pl. v, fig. 8, p. 131, *taganroguna*, Taganrog, fig. 9, p. 132, *perturbatana*, Guberli, fig. 10, p. 134, KENNEL, Deutsche ent. Zeitschr. Lep. xiii, n. spp.
- Exartema mori*, Japan, MATSUMURA, p. 196, Ent. Nachr. xxvi; *E. castaneanum*, p. 124, *velutinum*, p. 125, Korea, *japonicum*, *pryeranum*, p. 126, Japan, WALSINGHAM, Ann. Nat. Hist. vi : n. spp.
- Grapholitha tricuneana*, Caucasus, pl. v, fig. 30, p. 154, *recreantana*, Amur, fig. 31, p. 155, KENNEL, Deutsche ent. Zeitschr. Lep. xiii; *G. atrana*, Madagascar, MABILLE, p. 751, Ann. Soc. ent. France lxviii; *G. glycinivorella*, Japan, MATSUMURA, p. 197, Ent. Nachr. xxvi; *G. tristriatana*, *subsimplana*, p. 224, *speciosana*, p. 225, Bismarck Arch., PAGENSTECHER, Zoologica xxix : n. spp.
- Hendecaneura* n. g., p. 401, for *H. impar*, p. 402, *H. ? cervinum*, *apicipunctum*, p. 403, n. spp., Japan, WALSINGHAM, Ann. Nat. Hist. vi.
- Homona* Walk. cf. *Capua*.
- Hysterosia* ; synonymy and composition, WALSINGHAM, p. 445, Ann. Nat. Hist. vi.
- H. syriaca*, p. 446, *decipiens*, Asiatic Turkey, *coreana*, Korea, p. 447, WALSINGHAM, t. c. ; *H. (Idiographis) unionana*, Caucasus, KENNEL, p. 135, pl. v, fig. 11, Deutsche ent. Zeitschr. Lep. xiii : n. spp.
- Hystichoscelus* n. g. near *Helictophanes*, p. 335, for *H. spathanum* n. sp., Japan, p. 336, WALSINGHAM, Ann. Nat. Hist. vi.
- Laspeyresia iridescens*, p. 429, *quadrocellana*, *pavonana*, p. 430, *gudristriana*, p. 432, Japan etc., *difficilana*, p. 433, *functistriguna*, Asiatic Turkey, *geministriata*, China, p. 434, WALSINGHAM, t. c. n. spp.
- Leontochroma* n. g., p. 466, for *L. aurantiacum*, *suppurpuratum*, p. 467, *viridiochraceum*, Sikkim, *lebetanum*, China, p. 468, n. spp., WALSINGHAM, Ann. Nat. Hist. v.
- Lipsotelus* n. g. p. 569, near *Lobesia* for *L. lichenoides*, Tenasserim, *albifascies*, China, p. 570, n. spp., WALSINGHAM, Swinhoe, Cat. Lep. Het. ii.
- Loxopera ferruginea*, Asiatic Turkey, WALSINGHAM, Ann. Nat. Hist. vi, n. sp.
- Loxotania ishidaui*, Japan, MATSUMURA, p. 194, Ent. Nachr. xxvi, n. sp.
- Loxopera francillonana*, larval habits, CHAPMAN, p. xi, P. ent. Soc. London 1900.
- Microcorses* n. g., p. 465, for *M. marginifasciatus* n. sp., Japan, p. 466, WALSINGHAM, Ann. Nat. Hist. v.
- Olethreutes*, *Cymolomia*, *Eccopsis*, *Exartema*, characters and components, WALSINGHAM, pp. 127-129, Ann. Nat. Hist. vi.
- O. notata*, Japan, WALSINGHAM, p. 129, Ann. Nat. Hist. vi, n. sp.
- Oxygrapha* Hb. = (*Rhacodia* Hb.), WALSINGHAM, p. 369, Ann. Nat. Hist. v.
- O. quadridentana*, China, p. 369, *cerulea*, Japan, p. 370, *paradisana*, Amur & Japan, p. 371, *tunicatana*, p. 372, *japonica*, Japan, *undulana*, p. 374, with var. *copra*, Turkey in Asia, *swinhoeana*.

- p. 376, *fuscotogata*, p. 377, Japan, WALSINGHAM, Ann. Nat. Hist. v, n. spp.
- Pammene juliana, nimbana*, distinguished, generic position, WALSINGHAM, p. 193, Ent. Mag. xxxvi.
- P. nannodes*, Syria, p. 435, *P. ? griseana*, Japan, p. 436, WALSINGHAM, Ann. Nat. Hist. vi; *P. (Phthoroblastis) dichrorhamphana*, Chingan-Geb, pl. v, fig. 32, p. 156, KENNEL, Deutsche ent. Zeitschr. Lep. xiii: n. spp.
- Pelatea bicolor*, Japan, WALSINGHAM, p. 335, Ann. Nat. Hist. vi, n. sp.
- Penthina caucasiana* Lischk, p. 136, pl. v, fig. 12, *hepialana*, p. 137, fig. 13, *helvinana*, fig. 14, p. 138, Mongolia, KENNEL, Deutsche ent. Zeitschr. Lep. xiii; *P. apicinudana*, Madagascar, MABILLE, p. 750, Ann. Soc. ent. France lxviii: n. spp.
- Peronea cristana*, varr., DALE, p. 179, Entomologist xxxiii.
- Phacadophora* n. g. near *Phacasiophora*, for *P. fimbriata*, p. 130, *P. ? acutana*, p. 131, Japan, *divisa*, Assam, p. 132, *ochracea*, Corea, p. 133, n. spp., WALSINGHAM, Ann. Nat. Hist. vi.
- Phacasiophora fernaldana*, p. 135, *pryeri*, p. 136, Japan, WALSINGHAM, t. c. n. spp.
- Phalonia sabulicola* n. n. for *Conchylis erigerana* Wals. nec Riley, WALSINGHAM, p. 194, Ent. Mag. xxxvi.
- P. aestiva*, Asiatic Turkey, WALSINGHAM, p. 445, Ann. Nat. Hist. vi, n. sp.
- Pharmacis magister*, Asiatic Turkey, WALSINGHAM, p. 443, t. c.; *P. apicana*, Japan, WALSINGHAM, p. 489, op. cit. v: n. spp.
- Phoxopteris kincaidiana*, Alaska, FERNALD, p. 500, P. Washington Ac. ii, n. sp.
- Phitheochroa ? Cochylis ? thiana*, Thian Schan, STAUDINGER, p. 348, Deutsche ent. Zeitschr. Lep. xii; *P. albiscutellum*, Japan, WALSINGHAM, p. 487, Ann. Nat. Hist. v: n. spp.
- Polychrosis (Eudemis) herculeana*, Kuldscha, p. 139, pl. v, fig. 15, *P. pullana*, Taganrog, figg. 16, 17, p. 140, KENNEL, Deutsche ent. Zeitschr. Lep. xiii, n. spp.
- Propedesis* n. g. near *Carposina*, p. 122, for *P. excisa, japonica* n. spp., Japan, p. 123, WALSINGHAM, Ann. Nat. Hist. vi.
- Pygolopha rhodophana*, larval habits, WALSINGHAM, p. 152, Ent. Mag. xxxvi.
- Retinia argyromixtana*, Madagascar, MABILLE, p. 751, Ann. Soc. ent. France lxviii, n. sp.
- Sciaphila wahlbomiana* var. n. *obscurana*, REUTER, Acta Soc. Faun. Fenn. xv, No. 5, p. 46.
- Semasia oculatana*, Irkutsk, pl. v, fig. 19, p. 143, *paetulana*, Guberli, fig. 20, p. 145, *intermediata*, fig. 21, p. 146, *elutana*, figg. 22, 23, p. 147, *tundrana*, figg. 24, 25, p. 148, Amur, *infirmata*, Askhabad, fig. 29, p. 153, KENNEL, Deutsche ent. Zeitschr. Lep. xiii; *S. phaseoli*, Japan, MATSUMURA, p. 197, Ent. Nachr. xxvi: n. spp.
- Sericoris morivora*, Japan, MATSUMURA, p. 195, t. c. n. sp.
- Steganoptycha explicatana*, Guberli, pl. v, fig. 18, p. 141, KENNEL, Deutsche ent. Zeitschr. Lep. xiii; *S. arciferana, albosectana, selenana*, p. 752, *leucospilana, pusillana*, Madagascar, MABILLE, Ann. Soc. ent. France lxviii: n. spp.
- Syngamoneura* n. g. for *S. rubronotana* n. sp., Madagascar?, MABILLE, p. 750, t. c.
- Teras comparanum* var. n. *cinereana*, REUTER, p. 33, Acta Soc. Faun. Fenn. xv, No. 5.
- Thiodia infessana*, Asiatic Turkey, p. 404, *intacta*, Japan, p. 405, *sinensis*, China, *niveicaput*, Japan, p. 406, WALSINGHAM, Ann. Nat. Hist. vi, n. spp.
- Tortrix forsterana* var. n. *immaculatana*, STRAND, p. 43, Arch. Naturv.

- Christian. xxii, No. 5; *T. quinque maculana* Brem., characters, figure, KENNEL, p. 127, pl. v, fig. 3, Deutsche ent. Zeitschr. Lep. xiii; *T. musculinana*, note on, DURRANT, p. 60, Ent. Mag. xxxvi; *T. formosana*, larva, JOANNIS, p. 299, Bull. Soc. ent. France 1900; *T. paleana*, early stages, REUTER, pp. 35-39, Acta Soc. Faun. Fenn. xix, No. 1.
- T. saclava*, *stipulaceana*, *rubrostrigana*, p. 749, *ocellata*, p. 750, Madagascar, MABILLE, Ann. Soc. ent. France lxviii; *T. trigonana*, Japan, WAL-SINGHAM, p. 443, Ann. Nat. Hist. vi; *T. ditinctana*, *tigricolor*, Japan, p. 452, *conchyloides*, China, p. 453, *leechi*, p. 454, *christophana*, *joannis*, p. 455, China, *exuberans*, Korea, *striatulana*, China, etc., p. 456, *nigricaudana*, Korea, p. 459, *tristrami*, Palestine, p. 460, *barbarana*, Turkey in Asia, p. 461, WAL-SINGHAM, op. cit. v : n. spp.
- T. templana*, p. 225, *rufostriatana*, p. 226, Bisinarck Arch., PAGENSTECHER, Zoologica xxix; *T. argyraspis*, Brisbane, LOWER, p. 410, P. Linn. Soc. N. S. Wales xxv : n. spp.

## TINEIDÆ.

- [Cf. BUCKLER (191), BUSCK (205, 206), CHRÉTIEN (250-256), DIETZ (318), DYAR (363-365), FERNALD (416), HOFMANN (597), HOLLAND (595), JOANNIS (663), LOWER (828, 829), LUCAS (832), LÜDERS (836), MURTFELDT (932), PAGENSTECHER (975), PETERSEN (993), SORHAGEN (1255), STITZ (1285), STAUDINGER (1269), TURNER (1338), WAL-SINGHAM (1366-1371), WAL-SINGHAM & DURRANT (1298), WOOD (1418), ZEHNTNER (1428).]

The male genital structures of *Tinea*, *Tineola*, *Butalis*, STITZ (1285).

*Psychides*, see *Bombyces*.

*Agriophara nodigera*, Queensland, TURNER, p. 11, Tr. R. Soc. S. Austral. xxiv; *A. curta*, Queensland, LUCAS, p. 161, P. Soc. Queensland xv : n. spp.

*Anacampsis lagunculariella*, p. 230, *argyrothamniella*, p. 231, Florida, BUSCK, P. U. S. Mus. xxiii, n. spp.

*Anaphorinæ*, revision of North American, DYAR, pp. 305-311, Canad. Ent. xxxii.

*Androgyne* n. g., p. 565, near *Nosymna*, for *A. punctata* n. sp., Sikkim, p. 566, WAL-SINGHAM, Swinhoe, Cat. Lep. Het. ii.

*Antispila eugeniella*, Florida, BUSCK, p. 236, P. U. S. Mus. xxiii, n. sp.

*Aputema* n. g. near *Symmoca*, p. 219, for *A. mediopallidum* n. sp., Corsica, p. 220, WAL-SINGHAM, Ent. Mag. xxv.

*Aprocerema crotolariella*, Florida, BUSCK, p. 226, P. U. S. Mus. xxiii, n. sp.

*Ardiosteres scoteina*, Queensland, TURNER, p. 18, Tr. R. Soc. S. Austral. xxiv, n. sp.

*Argyrotoxa 5-fasciana*, Japan, MATSUMURA, p. 195, Ent. Nachr. xvi, n. sp.

*Aristotelia morphochroma*, Cannes and Rome, WAL-SINGHAM, p. 80, Ent. Mag. xxxvi; *A. ivæ*, Florida, BUSCK, p. 225, P. U. S. Mus. xxiii, n. sp.

*Atathalstis euchroa*, Queensland, LOWER, p. 47, P. Linn. Soc. N. S. Wales xxv, n. sp.

*Atteva fabriciella* Swed. (= *niviguttella* Walk. = *fabricella*), WAL-SINGHAM, p. 559, Swinhoe, Cat. Lep. Het. ii.

*A. conspiciua*, Buru, WAL-SINGHAM, p. 559, *subaurata*, Assam, DURRANT, p. 560, Swinhoe, t. c. n. spp.

*Atopocera barnesii*, Texas, DYAR, p. 326, Canad. Ent. xxxii, n. sp.

*Bedellia minor*, Florida, BUSCK, p. 243, P. U. S. Mus. xxiii, n. sp.

*Batrachedra atomosella*, Sokotra, WAL-SINGHAM

iii; *B. crypsineura*, N. S. Wales

Wales xxv : n. spp.

Mus.

- Birhana* and *B. consocia* Walk., redescribed, WALSINGHAM, p. 551, Swinhoe, Cat. Lep. Het. ii.
- Blabophanes rusticella* var. n. *semispilotella*, STRAND, p. 51, Arch. naturv. Christian. xxii, No. 5.
- B. stichomela*, S. Australia, LOWER, p. 422, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Blastobasis segnella*, the habitat is Europe, not N. America, WALSINGHAM, p. 179, Ent. Mag. xxxvi.
- B. guilandinae*, Florida, BUSCK, p. 234, P. U. S. Mus. xxiii, n. sp.
- Brenthia elachista*, Christmas Is., WALSINGHAM, p. 76, Monogr. Christmas Island, n. sp.
- Bucculatrix icella*, Florida, BUSCK, p. 243, P. U. S. Mus. xxiii, n. sp.
- Bursadella sulfurella*, Bismarck Arch., PAGENSTECHER, p. 231, Zoologica xxix, n. sp.
- Butalis basilaris*, see *Schreckensteiniella festaliella*.
- B. penicillata*, France, CHRÉTIEN, p. 163, Bull. Soc. ent. France 1900, n. sp.
- Buzeta* Walk., recharacterised, WALSINGHAM, p. 561, Swinhoe, Cat. Lep. Het. ii.
- Callithauma* n. g. *Plutellidae* for *C. basilica* n. sp., Queensland, TURNER, p. 15, Tr. R. Soc. S. Austral. xxiv.
- Catortycis emarginata*, Queensland, LUCAS, p. 154, P. Soc. Queensland xv, n. sp.
- Cavunaca insulella*, Corsica, WALSINGHAM, p. 153, Ent. Mag. xxxvi, n. sp.
- Cebysa leucotelus* Walk. = (*Pitane dilecta* Walk. = *Seseria conflictella* Walk. = *Acinea scotti* Scott), WALSINGHAM, p. 583, Swinhoe, Cat. Lep. Het. ii.
- Ceratophora ochreoviridella*, Bismarck Arch., PAGENSTECHER, p. 236, Zoologica xxix, n. sp.
- Cerostoma*, cf. *Phrealeia*.
- C. kabelella*, California, DYAR, p. 40, Canad. Ent. xxxii, n. sp.
- Chilocampyla* n. g. near *Gracilaria*, p. 248, for *C. dyariella* n. sp., Florida, p. 249, BUSCK, P. U. S. Mus. xxiii.
- Choreutis*, N. American allies, synonymy, characters, FERNALD, pp. 236–245, Canad. Ent. xxxii.
- C. leucobasis*, N. America, FERNALD, p. 242, t. c.; *C. sororcullella*, *occidentella*, *extrinseicella*, p. 86, *coloradella* (Fern.), *leucobasis* (Fern.), p. 85, N. America, DYAR, t. c.; n. spp.
- Chrysoryctis ochroxantha*, Brisbane, TURNER, p. 19, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Cimitra* Walk., distinguished from *Hapsifera*, DURRANT, p. 580, Swinhoe, Cat. Lep. Het. ii.
- Coleophora spissicornis* Haw. = (*fabriciella* de Vill.), WALSINGHAM & DURRANT, p. 4, Ent. Mag. xxxvi; *C. albidella* and *anatipennella*, distinguished, SORHAGEN, p. 113, Illustr. Zeitschr. Ent. v; *C. spumosaella*, *congeriella*, *acrisella*, larvae and cases, CHRÉTIEN, p. 68, Natural. xxii; *C. stefanii*, habits, WALSINGHAM, p. 59, Ent. Mag. xxxvi.
- C. mongetella*, E. Pyrenees, CHRÉTIEN, p. 69, Naturaliste xxii, n. sp.
- Coptodisca condalia*, Florida, BUSCK, p. 242, P. U. S. Mus. xxiii, n. sp.
- Coriscium randiella*, Florida, BUSCK, p. 247, t. c. n. sp.
- Coryptilum* Z. = (*Sippharara* Walk. = *Sagora* Walk.), *C. euchromiella* Walk. = (*repandens* Walk. M. S.), *C. rutillellum* = (*triphrenoides* Snell.), WALSINGHAM, p. 580, Swinhoe, Cat. Lep. Het. ii.
- Cosmopteryx scribaeiella*, distribution, ERTL, Illustr. Zeitschr. Ent. v, p. 163.
- C. pallifasciella* (Snell.), Java, ZEHNTNER (1428); *C. ipomaea*, *nigropunctella*, Florida, BUSCK, p. 235, P. U. S. Mus. xxiii; n. spp.
- Crocantbes zonodesma*, Queensland, LOWER, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Cryptophaga balteata* Walk. (as *Zitna*) = (*lurida* Meyr. = *acroleuca* Turn.), TURNER, p. 7, Tr. R. Soc. S. Austral. xxiv.



- C. opalina*, Brisbane, TURNER, l. c.; *C. eugeniae*, p. 153, *molaris*, p. 154, Queensland, LUCAS, P. Soc. Queensland xv : n. spp.
- Cyptasia* Walk., cf. *Themiscyra*.
- Cyrtia* n. g. near *Apiletria*, p. 218, for *C. barbata* n. sp., Corsica, p. 219, WALSINGHAM, Ent. Mag. xxxvi.
- Davendra* Moore, cf. *Tortricomorpha*.
- Dendroneura punctata*, Christmas Is., WALSINGHAM, p. 80, Monogr. Christmas Island, n. sp.
- Depressaria persicæella*, N. America [Murtfeldt, 1899] referred to *Gelechia* and redescribed, with larva, MURTFELDT, Canad. Ent. xxxii, pp. 164, 165; *D. amyrisella*, Florida, BUSCK, p. 233, P. U. S. Mus. xxiii : n. spp.
- Enamia rutilella*, Bismarck Arch., PAGENSTECHER, p. 233, Zoologica xxix; *E. mixoleucha*, Queensland, TURNER, p. 14, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Eomystis asteropa*, Queensland, LOWER, p. 410, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Epermenia pimpinella*, N. America, with egg and larva, MURTFELDT, p. 162, Canad. Ent. xxxii, n. sp.
- Eretmocera aurovittata*, Bismarck Arch., PAGENSTECHER, p. 23, Zoologica xxix, n. sp.
- Eriocephalidæ* and *Micropterygidæ*, relations etc., HOFMANN (597).
- Eriocrania fimbriata*, England, WALSINGHAM, p. 106, Ent. Mag. xxxvi, n. sp.
- Eschatura lemuriæ* Meyr. = (*Phlæophora codonoptera* Turn.), TURNER, p. 11, Tr. R. Soc. S. Austral. xxiv.
- Eucatagma* n. g. *Tineidæ*, for *E. amyrisella* n. sp., Florida, BUSCK, p. 247, J. N. York Ent. Soc. viii.
- Eucatoptus striatella*, N. America, p. 163, with larva, p. 164, MURTFELDT, Canad. Ent. xxxii, n. sp.
- Euclemensia schwarziella*, N. America, BUSCK, p. 239, J. N. York Ent. Soc. viii, n. sp.
- Eucordylea* n. g. *Gelechiidæ*, p. 349, for *E. atrupictella* n. sp., N. America, DIETZ, Ent. News Philad. xi.
- Eucosmophora sideroxyllonella*, Florida, BUSCK, P. U. S. Mus. xxiii, n. sp.
- Eulechria autophylla* n. n. for *autophylla* Low., LOWER, p. 412, P. Linn. Soc. N. S. Wales xxv.
- E. photinopsis*, p. 40, *eriopa*, *pentaspila*, p. 41, N. S. Wales, LOWER, t. c.; *E. leptomera*, Victoria, LOWER, p. 412, t. c. : n. spp.
- Eulepiste cockerelli*, New Mexico, DYAR, p. 307, Canad. Ent. xxxii, n. sp.
- Exapate duratella*, natural history, CHRÉTIEN, pp. 118-120, Naturaliste xxii.
- Felderia dorsimacula*, Arizona, DYAR, p. 328, Canad. Ent. xxxii, n. sp.
- Gelechia apolectella*, Corsica, p. 216, *lyciella*, *micradelpha*, Perpignan, p. 217, *G. ? ocymoidella*, Vernet, p. 218, WALSINGHAM, Ent. Mag. xxxvi; *G. fusculella*, Bismarck Arch., PAGENSTECHER, p. 235, Zoologica xxix; *G. sarcochroma*, Sokotra, WALSINGHAM, p. 3, Bull. Liverp. Mus. iii; *G. ? mesoleuca*, *G. tridecta*, p. 48, *dictyomorpha*, p. 49, *orthanotos*, p. 50, Australia, LOWER, P. Linn. Soc. N. S. Wales xxv; *G. melanartha*, p. 416, *heliochares*, *heliopa*, p. 417, N. S. Wales, LOWER, t. c. : n. spp.
- Genosteles* n. g. *Hyponomeutidæ*, p. 5, for *G. reniger* n. sp., Sokotra, p. 6, WALSINGHAM, Bull. Liverp. Mus. iii.
- Glyphipteryx fuscoviridella*, larva and habits, SICH, p. 192, Ent. Rec. xii; *G. equitella*, larva, SICH, p. 298, t. c.
- G. quadragintapunctata*, Kansas, DYAR, p. 84, Canad. Ent. xxxii, n. sp.
- Gnorimoschema* n. g. type *Gelechia galle-solidaginis* Riley. *G. germani* n. sp., Florida, BUSCK, p. 227, P. U. S. Mus. xx<sup>vi</sup>

- Gonæpa* and *G. josianella* Walk., characters of, WALSINGHAM, p. 543, Swinhoe, Cat. Lep. Het. ii.
- Goniodoma*, larval habits, WALSINGHAM, p. 158, Ent. Mag. xxxvi.
- Gourbia* n. g., *staphylinella* n. sp., Tunis, CHRÉTIEN, p. 119, Naturaliste xxii.
- Gracilaria polyplaca*, sexes, TURNER, p. 20, Tr. R. Soc. S. Austral. xxiv.
- G. coccinea*, India, WALSINGHAM, p. 576, Swinhoe, Cat. Lep. Het. ii; *G. albicincta*, p. 20, *leptalea*, p. 21, Brisbane, TURNER, Tr. R. Soc. S. Austral. xxiv : n. spp.
- G. burserella*, *sebastianella*, Florida, BUSCK, p. 251, P. U. S. Mus. xxiii, n. spp.
- Guenea* Bruand, 1847, omitted from Scudder's Nomenclator, WALSINGHAM, p. 152, Ent. Mag. xxxvi.
- Hemerophila dyari*, with larva, Florida, BUSCK, p. 242, nervuration, pl. ix, fig. 9, BUSCK, J. N. York Ent. Soc. viii, n. sp.
- Hieropota* Meyr., cf. *Tisobarica*.
- Homadula coseinopa*, N. S. Wales, LOWER, p. 51, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Homaledra* n. g. *Elachistidae*, p. 236, for *H. heptathalama* n. sp., Florida, p. 237, BUSCK, P. U. S. Mus. xxiii.
- Hoplatica* Meyr., cf. *Tisobarica*.
- H. habroptera*, Queensland, LOWER, p. 411, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Hyperperissa* n. g. *Gelechiidae*, for *Sidyra aurantiaca* Semper, WALSINGHAM, p. 546, Swinhoe, Cat. Lep. Het. ii.
- Hypsolophus granti*, p. 2, *thoracella*, p. 3, Sokotra, WALSINGHAM, Bull. Liverpool. Mus. iii, n. spp.
- Ischnoscia* Meyr. = (*Guenea* Mill. nec Bruand), WALSINGHAM, p. 152, Ent. Mag. xxxvi.
- I. carbonifera*, Corsica, id. l. c. n. sp.
- Jobula* Walk., cf. *Tortricomorpha*.
- Lamprolophus* n. g. *Elachistidae*, for *L. lithella* n. sp., Florida, with larva, p. 241, nervuration, pl. ix, fig. 5, BUSCK, J. N. York Ent. Soc. viii.
- Laverna argentimaculella*, N. America, with larva, MURTFELDT, Canad. Ent. xxxii, n. sp.
- Leioprora* n. g. near *Lyonetia*, for *L. ascepta* n. sp., Brisbane, TURNER, p. 22, Tr. R. Soc. S. Austral. xxiv.
- Leucoptera smilaciella*, with larva, N. America, BUSCK, p. 244, nervuration, pl. ix, fig. 6, J. N. York Ent. Soc. viii; *L. erythrinella*, *guettardella*, Florida, BUSCK, p. 239, P. U. S. Mus. xxiii : n. spp.
- Lichenaula inscripta*, male, TURNER, p. 9, Tr. R. Soc. S. Austral. xxiv.
- L. velitata*, *circumsignata*, p. 155, *dirigens*, *provisa*, p. 156, *petulanz*, *umbrosa*, p. 157, *tortriciformis*, p. 158, Queensland, LUCAS, P. Soc. Queensland xv; *L. amblygona*, p. 9, *tholodes*, p. 10, Brisbane, TURNER, Tr. R. Soc. S. Austral. xxiv : n. spp.
- Linosticha pudica*, N. S. Wales, LOWER, p. 41, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Lita mucronatella*, Alps, CHRÉTIEN, p. 138, Bull. Soc. ent. France 1900; *L. capsophilella*, Alps, CHRÉTIEN, p. 223, t. c. : n. spp.
- Lithocolletis*; structure, larvæ and habits of species allied to *L. concomitella*, WOOD (1418); *L. mahalebella*, distinguished from *cerasiocollata*, and *betule* from *corylifoliella*, SORHAGEN, pp. 114, 115, Illustr. Zeitschr. Ent. v; *L. schreberella*, var. n. *obumbrata*, p. 212, pl., fig. 4, *quinqueguttella* Staint. and others, pp. 232, 233, *cerisolella* etc., pp. 248-251, characters and habits, SORHAGEN, t. c.; *L. pyriorella*, habits, BANKES, p. 125, Ent. Mag. xxxvi.
- Lithocolletis lativittella*, p. 211, pl., fig. 1, *crocinella*, fig. 2, *gracseriella*, fig. 5, p. 212, *domesticella*, fig. 14, p. 213, *repentella*, p. 232, fig. 7, *dahmicella*,

- p. 250, fig. 18, Germany, SORHAGEN, Illustr. Zeitschr. Ent. v; *L. verbesinella*, Florida, BUSCK, p. 246, P. U. S. Mus. xxiii : n. spp.
- Lozostoma asema*, Queensland, TURNER, p. 23, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Metriochroa* n. g. near *Ornix*, p. 244, for *M. psychotriella*, n. sp., Florida, p. 245, BUSCK, P. U. S. Mus. xxiii.
- Metzneria lappella*, early stages, FYLES, p. 15, Canad. Ent. xxxii; *M. littorella*, larva, WALSINGHAM, p. 127, Ent. Mag. xxxvi.
- Micropteryx*; larval habits, pupa, fig., HOFMANN, pp. 84-86, and 99, Illustr. Zeitschr. Ent. v; *Micropterix* and *Eriocrania*, synonymy, TUTT, pp. 314, 315, Ent. Rec. xii.
- Mieza* ? *inornata*, Sokotra, WALSINGHAM, p. 6, Bull. Liverp. Mus. iii; *M. ? sanguinicornis*, Ceylon, WALSINGHAM, p. 562, Swinhoe, Cat. Lep. Het. ii, n. sp.
- Monopis meliorella* Walk. = (*nivibractella* Walk. = *nivileractella* Walk.), WALSINGHAM, p. 577, Swinhoe, t. c.
- Machæritis xerodes*, N. S. Wales, LOWER, p. 414, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Macrobathra philopamma*, S. Australia, LOWER, p. 47, t. c. n. sp.
- M. zonodesma*, p. 414, *eudesma*, *microspora*, p. 415, Australia, LOWER, t. c. n. spp.
- Marmara guilandinella*, Florida, BUSCK, p. 245, P. U. S. Mus. xxiii, n. sp.
- Maroga mythica* Meyr. = (*undosa* Luc.), TURNER, p. 10, Tr. R. Soc. S. Austral. xxiv.
- Nealyda* n. g. *Elachistidæ*, p. 350, for *N. bifidella*, n. sp., Colorado, pl. i, fig. 2, p. 351, DIETZ, Ent. News Philad. xi.
- Nealyda* referred to *Glechiidæ*, p. 228, *N. pisoniæ*, p. 229, *kinzella*, p. 230, Florida, BUSCK, P. U. S. Mus. xxiii, n. spp.
- Nematosis solstitiella*, India, WALSINGHAM, p. 584, Swinhoe, Cat. Lep. Het. ii, n. sp.
- Nemophora leptosticta*, p. 16, *iolampra*, p. 17, Australia, TURNER, Tr. R. Soc. S. Austral. xxiv, n. spp.
- Neolophus persimplex*, Arizona, DYAR, p. 327, Canad. Ent. xxxii, n. sp.
- Nephogenes basatra*, p. 43, *crassinervis*, *susanae*, p. 44, *atrisignis*, p. 45, *erebomorpha*, p. 46, N. S. Wales, LOWER, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Nepticula condaliafoliella*, *myricafoliella*, Florida, BUSCK, p. 238, P. U. S. Mus. xxiii, n. sp.
- Œcophora megaloplaca*, N. S. Wales, LOWER, p. 46, P. Linn. Soc. N. S. Wales xxv; *Œ. eusema*, N. S. Wales, LOWER, p. 413, t. c. : n. spp.
- Onebala simplex*, Sokotra, WALSINGHAM, p. 2, Bull. Liverp. Mus. iii, n. sp.
- Opogona dimidiatella*, the habitat is Java, not Europe, WALSINGHAM, p. 180, Ent. Mag. xxxvi.
- Opostega nubifera*, Queensland, TURNER, p. 23, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Ornix trigonophora*, p. 21, *acrobaphes*, p. 22, Queensland, TURNER, t. c. n. spp.
- Ortholophus piger*, Texas, DYAR, p. 328, Canad. Ent. xxxii, n. sp.
- Otites bambusæ*, *hederæ*, India, WALSINGHAM, p. 544, Swinhoe, Cat. Lep. Het. ii, n. spp.
- Palparia*, cf. *Wingia*.
- Paltodora sagittifera*, N. S. Wales, LOWER, p. 416, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Paramorpha aprilina*, habits, early stages, pp. 645, 646, imago, pl. fig. 1, FROGGATT, Agric. Gaz. N. S. W. xi.
- Pedois* n. g. (Meyr.) *Œcophorida*, with *P. cosmopoda*, p. 12, *rhodantha*, p. 13, n. spp., Queensland, and including *Acanthopoda* ' ' ' *neurosticha* Low., TURNER, Tr. R. Soc.



- Peritornenta* n. g. (Meyr.) *Æcophoridae*, p. 13, for *P. stigmatias* n. sp., Brisbane, p. 14, and *circulatella* Walk., TURNER, t. c.
- Philobota micrastis*, *paragypsa*, p. 412, *P. ? tetraspora*, p. 413, Australia, LOWER, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Phrealcia* n. subg. of *Cerostoma*, for *P.* (sic) *brevipalpella*, n. sp., Alps of France, CHRÉTIEN, p. 90, Bull. Soc. ent. France 1900; *P. brevipalpella*, habits, VIARD, p. 270, t. c.
- Phyllocnistis*; LÜDERS (836); *P. insignis* Frey = (*erechthisella* Chamb.), BUSCK, p. 252, P. U. S. Mus. xxiii.
- P. sorhageniella*, LÜDERS (836); *P. intermediella*, Florida, BUSCK, p. 253, P. U. S. Mus. xxiii: n. spp.
- Phylomictis aretans*, p. 159, *decretoria*, *obliquata*, p. 160, Queensland, LUCAS, P. Soc. Queensland xv, n. spp.
- Pilostibes trachyptera*, Queensland, TURNER, p. 6, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Podiasa* n. g. *Tineidæ* for *P. chiococcella*, n. sp., Florida, BUSCK, p. 240, P. U. S. Mus. xxiii.
- Polyhymno acaciella*, with larva, N. America, nervuration, pl. ix, fig. 1, BUSCK, p. 235, J. N. York Ent. Soc. viii, n. sp.
- Procometis hyllonoma* Meyr. = (*acompta* Turnl. = *heterogama* Low.), TURNER, p. 11, Tr. R. Soc. S. Austral. xxiv.
- Pseudocaprina* n. g. for part of *Caprina*, with *P. callopisma*, New Guinea, p. 563, *albofimbriata*, Waigin, p. 564, n. spp., WALSINGHAM, Swinhoe, Cat. Lep. Het. ii.
- Pseudochelaria walsinghami*, N. America, DIETZ, p. 352, pl. i, fig. 3, Ent. News Philad. xi, n. sp.
- Pseudotortrix* n. g. *Plutellidæ*, p. 15, for *P. acosma*, n. sp., Brisbane, p. 16, TURNER, Tr. R. Soc. S. Austral. xxiv.
- Pyroderces thermophila*, New South Wales, LOWER, p. 419, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Sagora* Walk. cf. *Coryptilum*.
- Saphtha elegans*, India, WALSINGHAM, p. 567, Swinhoe, Cat. Lep. Het. ii, n. sp.
- Scardia clathrella* F. & R. = (*dicyotis* Meyr.), WALSINGHAM, p. 579, t. c.
- Scelorthus* n. g. *Elachistidæ*, p. 239, for *S. pisoniella*, n. sp., Florida, p. 240, nervuration, pl. ix, fig. 4, larva, p. 240, BUSCK, J. N. York Ent. Soc. viii.
- Schreckensteinia festaliella*, nec *Butalis basilaris*, was the species habits of which were recorded in *Psyche* vii, 1895; DYAR, p. 11, *Psyche* ix.
- Scythris denticolor*, *neurogramma*, p. 4, *S. ? pectinicornis*, p. 5, Sokotra, WALSINGHAM, Bull. Liverp. Mus. iii, n. spp.
- Simaethis ornaticornis*, Christmas Is., WALSINGHAM, p. 77, Monogr. Christmas Island, n. sp.
- Sippharara* Walk. cf. *Coryptilum*.
- Stathmopoda mannophora*, Queensland, TURNER, p. 23, Tr. R. Soc. S. Austral. xxiv, n. sp.
- Syntomactis oxyptera*, *zenonympha*, p. 420, *chionomera*, p. 421, N. S. Wales, LOWER, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Telecrates tessellata*, Queensland, LUCAS, p. 159, P. Soc. Queensland xv, n. sp.
- Thaumato-grapha excellens*, Bismarck Arch., PAGENSTECHER, p. 230, Zoologica xxix, n. sp.
- Thenuscyra* Walk. = (*Cyptasia* Walk.), WALSINGHAM, p. 560, Swinhoe, Cat. Lep. Het. ii.
- Tinea vinculella* and allies, synonymy, WALSINGHAM, p. 177, Ent. Mag. xxxvi; *T. fuscipunctella*, destroying pupæ, SKINNER & SATTERTHWAIT, p. 502, Ent. News Philad. xi.
- T. richardsoni*, England, p. 176, *mensella*, Corsica, p. 177, *pachyceras*,

- Switzerland, p. 178, WALSINGHAM, Ent. Mag. xxxvi; *T. oregonella*, N. America, BUSCK, p. 246, J. N. York Ent. Soc. viii : n. spp.
- Tisobarica* Walk. = (*Hieropola* Meyr. = *Hoplitica* Meyr.), WALSINGHAM, p. 553, Swinhoe, Cat. Lep. Het. ii.
- Tortricomorpha* Feld. = (*Vinzela* Walk. = *Jobula* Walk. = *Davendra* Moore), WALSINGHAM, p. 546, Swinhoe, Cat. Lep. Het. ii.
- T. chlorolepis*, Christmas Is., WALSINGHAM, p. 78, Monogr. Christmas Island; *T. albifasciella*, Bismarck Arch., PAGENSTECHER, p. 234, Zoologica xxix; *T. hemixanthella*, Buru, HOLLAND, p. 590, Nov. Zool. vii; *T. congrualis*, New Guinea, p. 546, *diluticiliata*, Assam, *obliquefasciata*, Singapore, p. 547, WALSINGHAM, Swinhoe, Cat. Lep. Het. ii : n. spp.
- Trachyntis erebocosma*, p. 42, *peloma*, p. 43, N. S. Wales, LOWER, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Trichotaphe melantharella*, *condaliavorella*, Florida, BUSCK, p. 232, P. U. S. Mus. xxiii, n. spp.
- Tridonella* n. g. *Oecophoridae*, p. 236, pl. ix, fig. 2, for *T. pergandeella*, with larva, p. 237, *vilella*, p. 238, n. spp., N. America, BUSCK, J. N. York Ent. Soc. viii.
- Vinzela* Walk., cf. *Tortricomorpha*.
- Walsinghamia slossonia*, Florida, FERNALD, p. 244, Canad. Ent. xxxii, n. sp.
- Wingia* n. n. for *Palparia* Wing, WALSINGHAM, p. 552, Swinhoe, Cat. Lep. Het. ii.
- Xenolechia peltosema*, N. S. Wales, LOWER, p. 50, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Xyloricta lychnobii*, Queensland, LUCAS, p. 158, P. Soc. Queensland xv; *X. assimilis*, p. 7, *acrochroa*, p. 8, Australia, TURNER, Tr. R. Soc. S. Austral. xxiv : n. spp.
- Xysmatodona polymeres*, *lenceres*, Brisbane, TURNER, p. 18, Tr. R. Soc. S. Austral. xxiv, n. spp.
- Iponomeutidae*; table of N. American genera, and synonymy of species, DYAR, pp. 37 etc. Canad. Ent. xxxii.
- Ypsolophus chloranthes*, *macrosemus*, N. S. Wales, LOWER, p. 418, P. Linn. Soc. N. S. Wales xxv, n. spp.
- Zauclophora* n. g. near *Lichenaula*, p. 8, for *Z. pelodes*, n. sp., Brisbane, p. 9, TURNER, Tr. R. Soc. S. Austral. xxiv.
- Zelleria phillyrella*, in Ireland, BARRETT, p. 4, Ent. Mag. xxxvi.
- Z. ribesiella*, Ardèche, JOANNIS, p. 391 (larva, CHRÉTIEN, p. 393), Bull. Soc. ent. France 1900; *Z. cremnospile*, *hemixipha*, p. 421, *leucomorpha*, p. 422, Australia, LOWER, P. Linn. Soc. N. S. Wales xxv : n. spp.
- Zonops* n. g. *Tineidae*, for *Z. heteroleuca*, n. sp., Brisbane, TURNER, p. 17, Tr. R. Soc. S. Austral. xxiv.

## PTEROPHORIDÆ and ORNEODIDÆ.

[Cf. BUCKLER (191), CHAPMAN (240), PAGENSTECHER (975), PETERSEN (993), SCHÜTZE (1168), WALSINGHAM (1366, 1367), WALSINGHAM & DURRANT (1298).]

- Acipitilia niveodactyla*, Bismarck Arch., PAGENSTECHER, p. 240, Zoologica xxix, n. sp.
- Agdistis minima*, Sokotra, WALSINGHAM, p. 1, Bull. Liverp. Mus. iii, n. sp.
- Alucita albitarsella*, India, WALSINGHAM, p. 542, Swinhoe, Cat. Lep. Het. ii, n. sp.
- Amblyptilia* ? *atrodactyla*, Bismarck Arch., PAGENSTECHER, p. 239, Zoologica xxix, n. sp.

- Cosmoclostis quadriguadra*, Christmas Is., WALSINGHAM, p. 75, Monogr. Christmas Island, n. sp.
- Deuteroscopus rubrodactylus*, Bismarck Arch., PAGENSTECHER, p. 241, Zoologica xxix, n. sp.
- Hofmannia* n. g. *Orneodidae*, for *H. septemdactyla* n. sp., Bismarck Arch., PAGENSTECHER, p. 241, t. c.
- Orneodes hofmanni*, Bismarck Arch., PAGENSTECHER, p. 242, t. c.
- Leioptilus* ? *griseodactylus*, *L. sericeodactylus*, Bismarck Arch., PAGENSTECHER, p. 240, t. c. n. spp.
- Pterophorus galactodactylus*, last larval moult, CHAPMAN (240).
- Synaphia* n. g. *Pterophoridae*, for *S. pyrrha* n. sp., Bismarck Arch., PAGENSTECHER, p. 238, Zoologica xxix.
- Trichoptilus ralumensis*, Bismarck Arch., PAGENSTECHER, p. 239, t. c. n. sp.

(D.) DIPTERA.

[Cf. AUSTEN (48, 983), BECKER (82, 83), BENGTSSON (94), BERLESE (103-105), BEZZI (118, 119), BOLLE (135), BRUES (185), CANNON (226), CHRISTOPHERS & STEPHENS (257), COCKERELL (268-270), COLLEDGE (287), COQUILLET (288-294, 616), CZERNY (306-308), DANIELS (309), DANIELS, STEPHENS & CHRISTOPHERS (310), DOANE (333), ESCHERICH (382), FRENCH (447), FROGGATT (464, 468), GILES (508), GRASSI (516-519), HENDEL (580, 581), HENNEGUY (582), HINE (594), HOUGH (609), HOWARD (611, 612, 613, 615), HUBER (618), HUNTER (630), HUTTON (631), IMHOF (637), JACOBS (638, 639), JOHNSON (665, 666), KELLOGG (683-685), KERTÉSZ (695-699), KIEFFER (477, 704-708), KIEFFER & TROTTER (708), LAVERAN (799-801), LÉCAILLON (806), LUNDBECK (838), LÜSTNER (839), DE MEJERE (886-888), MELANDER (889), MELANDER & BRUES (890), MÉNÉGAUX (894, 895), MIALI & HAMMOND (907), MIK (909-911), MEUNIER (900, 905), NOÉ (946), ORMEROD (965), OSTEN SACKEN (972), PANDELLÉ (977), PANTEL (978), PIEPER (984), PERRONCITO (992), PORTSCHINSKY (1048, 1049), PRATT (1054), RICARDO (1115-1117), RÜDER (1124), SAUNDERS (1148), SHARP (1208), SNOW & MILLS (1252), SPEISER (1260-1264), STEFANI (1274), STEIN (1276-1280), STEPHENS & CHRISTOPHERS (1281), STROBL (1290-1292), SUPINO (1293-1295), THEOBALD (1314, 1316), TRUCHOT (1329), VANÉY (1348-1350), VILLENEUVE (1358), VOGLER (1359, 1360), WASMANN (1378), WEBSTER (1388), WESCHÉ (1406), WHEELER (1410, 1411), WILLISTON (511), WRIGHT (1419), WULF (511).]

On *Diptera* with dimorphic or aborted wings, MIK, pp. 143-145, Wien. ent. Zeit. xix.

The forms in which halteres are absent, SPEISER, Arch. Naturg. lxi, p. 41.

Physiology of metamorphosis, see Physiology, p. 84, and Development, p. 88.

The heart-cords of *Phalacrocer* larva, BENGTSSON (94).

Structure and life history of *Chironomus*, MIALI & HAMMOND (907).

Catalogue of S. American *Diptera*, pt. i, Bibliography and *Nemocera*, HUNTER (630).

Claws, empodium and pulvilli, KIEFFER (708).

Oxen-born Bees, WRIGHT (1419).

*Diptera* and human excrement, conveyance of typhoid, HOWARD (611).

*Diptera* of Alaska, COQUILLET (290).

*Diptera* of Greenland, LUNDBECK (838).

Embryology of *Melophagus*, origin of imaginal discs, PRATT (1054).

The splitting of the puparium in various *Diptera*, relations of *Orthorrhapha* and *Cyclorrhapha*, *Cyclorrhapha anatria*, and *C. atrata*, DE MEJERE (886).

*Eretmoptera* n. g. of doubtful family? near *Chironomida*, for *E. browni* n. sp., California, KELLOGG, p. 82, Biol. Bull. i.

## CECIDOMYIIDÆ.

- Monograph of *Cecidomyiidae* of Europe and Algeria, p. i, Bibliography, 828 titles: Morphology, metamorphosis, larval habits, galls, KIEFFER, Ann. Soc. ent. France lxi, pp. 181-384, pls. xv-xxiv.
- Synopsis of *Cecidomyiidae* of Europe and Algeria, KIEFFER (705).
- Hessian-fly, FROGGATT (464).
- Physiology of metamorphosis, larval anatomy, *Diplosis*, BERLESE, pp. 100-118, Riv. Patol. Veg. viii.
- Cecidomyiid gall on the Monterey pine, CANNON (226).
- Asphondylia sarothamni*, synonymical note, KIEFFER, p. 383, Bull. Soc. ent. France 1900.
- A. conglomerata*, Sicily, STEFANI, p. 16, Atti Acc. Gioen. lxxvii; *A. pilosa*, *stefanii*, *thymi*, Europe and Algeria, KIEFFER, p. 59, Bull. Soc. Metz, Cah. 20; *A. mentzeliae*, New Mexico, COCKERELL, p. 302, Entomologist xxxiii: n. spp.
- Cecidomyia fagi*, synonymical note, KIEFFER, p. 383, Bull. Soc. ent. France 1900; *C. oenophila*, habits, larva, galls, TRUCHOT (1329).
- D. pini-radiata*, California, SNOW & MILLS, p. 491, pl. xii, Ent. News Philad. xi, n. sp.
- Clinodiplosis caricis*, Europe, KIEFFER, p. 61, Bull. Soc. Metz, Cah. xx; *C. vitis*, Germany, LÜSTNER, p. 81, pl., Ent. Nachr. xxvi: n. spp.
- Contarinia ballota*, *scabiosa*, p. 60, *ilicis*, *aqualis*, p. 61, Europe, Algeria, KIEFFER, Bull. Soc. Metz, Cah. 20, n. spp.
- Dasyneura scirpi*, Europe, KIEFFER, p. 58, t. c. n. sp.
- Dicerura* n. g. near *Holoneurus*, for *D. scirpicola* n. sp., Europe, KIEFFER, t. c. p. 57.
- Diplosis rosivora*, N. America, COQUILLETT, p. 46, Bull. U. S. Dep. Agric. Ent. xxii; *D. violicola*, N. America, COQUILLETT, p. 48, t. c.: n. spp.
- Dryomia* n. g. for *Cecidomyia circinnans*, etc., KIEFFER, p. 17, Bull. Soc. Metz, Cah. 20.
- Harmandia petioli*, Europe, KIEFFER, p. 61, t. c. n. sp.
- Hormomyia cornifex*, Europe, KIEFFER, p. 60, t. c. n. sp.
- Janetiella* n. g. for *Cecidomyia thymi*, etc., KIEFFER, t. c., p. 23.
- Lasioptera thapsiae*, Algeria, *graminicola*, Europe, KIEFFER, p. 58, t. c. n. spp.
- Lestodiplosis lineata*, *alternans*, *septemguttata*, *cruenta*, p. 62, *pallidicornis*, *fratricida*, *rosea*, *corticalis*, p. 63, Europe and Algeria, KIEFFER, t. c. n. spp.
- Macrolabis hippocrepidis*, Europe, KIEFFER, p. 59, t. c. n. sp.
- Mikiola cristata*, Europe, KIEFFER, p. 60, t. c. n. sp.
- Neocerata* n. g. for *N. rhodophaga* n. sp., N. America, COQUILLETT, p. 47, Bull. U. S. Dep. Agric. Ent. xx.
- Oligotrophus pantelii* or *juniperinus*, gall, MIK, p. 147, Wien. ent. Zeit. xix.
- Pseudhormomyia* n. g., p. 57, for *P. granifex* n. sp., Europe, p. 58, KIEFFER, Bull. Soc. Metz, Cah. 20.
- Rhopalomyia kiefferi*, Italy, TROTTER, p. 285, Bull. Soc. ent. France 1900; *R. giraldii*, galls on *Artemisia* in China, KIEFFER & TROTTER, p. 233, t. c.; *R. giraldii*, habitat in Algeria, GIARD, p. 260, t. c.: n. spp.
- Rhizomyia* n. g. near *Contarinia*, p. 56, for *R. perplexa* n. sp., Europe, p. 57, KIEFFER, Bull. Soc. Metz, Cah. xx.
- Stefaniella* near *Lasioptera*, p. 55, for *S. atriplicis*, *brevipalpis* n. spp., Sicily, p. 56, KIEFFER, t. c.
- Stefaniella trinacriae*, Sicily, STEFANI, p. 9, Atti Acc. Gioen. lxxvii, n. sp.
- Strobliella* n. g. *Campylomyzidea*, for *S. intermedia* n. sp., Styria, KIEFFER, p. 51, Bull. Soc. Metz, Cah. 20.

*Wasmanniella* n. g. *Campylomyzides*, for *W. aptera* n. sp., Europe, KIEFFER, p. 49, t. c.

## MYCETOPHILIDÆ.

Relations of existing genera, and those found in amber, MEUNIER (905).

*Boletina analis* var. *postposita*, STROBL, p. 98, Wien. ent. Zeit. xix.

*B. inops*, Alaska, COQUILLETT, p. 391, P. Washington Ac. ii, n. sp.

*Ceroplastus bellulus*, Mexico, p. 219, pl. iv, fig. 3, WILLISTON, Biol. Centr.-Amer. Dipt. i, n. sp.

*Diadocidia borealis*, Brit. Colombia, COQUILLETT, p. 390, P. Washington Ac. ii, n. sp.

*Glaphyroptera maculosa*, Travnik, STROBL, p. 653, Wiss. Mitt. Bosnien vii, n. sp.

*Hesperodes* n. g. near *Hesperinus*, for *H. johnsoni* n. sp., N. America, COQUILLETT, p. 429, Ent. News Philad. xi.

*Platyura elegantula*, Mexico, p. 218, pl. iv, fig. 2, WILLISTON, Biol. Centr.-Amer. Dipt. ii, n. sp.

*Plesiastina bifasciata*, Mexico, WILLISTON, p. 217, pl. iv, fig. 1, t. c. n. sp.

*Monoclona atrata*, Jablanica, STROBL, p. 651, Wiss. Mitt. Bosnien vii, n. sp.

*Mycetophila signata*, physiology of metamorphosis, larval anatomy, BERLESE, Riv. Patol. Veg. viii, pp. 86-97.

*Neoempheria kincaidi*, Alaska, COQUILLETT, p. 391, P. Washington Ac. ii, n. sp.

*Neoglaphyroptera amabilis*, Mexico, WILLISTON, p. 219, Biol. Centr.-Amer. Dipt. i, n. sp.

*Palæosynapha* n. g. near *Synapha*, see Palæoentomology, p. 115.

*Sciara*; Spanish spp. and var., STROBL, pp. 95-98, Wien. ent. Zeit. xix.

*S. obtusicauda*, p. 95, *morena*, p. 97, Spain, STROBL, t. c.; *S. exposita*, Alaska, COQUILLETT, p. 392, P. Washington Ac. ii: n. spp.

*Sciophila cinerascens* var. *supposita*, STROBL, p. 98, Wien. ent. Zeit. xix.

*Trichosia parcepilosa*, Spalato, STROBL, p. 650, Wiss. Mitt. Bosnien vii, n. sp.

## CHIRONOMIDÆ.

*Belgica* n. g., p. 106, for *B. antarctica*, *magellanica* n. spp., Patagonia, p. 107, JACOBS, Ann. Soc. ent. Belgique xlv.

*Ceratopogon cantabricus*, p. 169, *morena*, *castellanus*, p. 170, *pallidatarsatus*, p. 171, Spain, STROBL, Wien. ent. Zeit. xix; *C. arcticus*, *hirtulus*, p. 396, *cilipes*, p. 397, Alaska, COQUILLETT, P. Washington Ac. ii; *C. pachymerus*, Mexico, WILLISTON, p. 224, Biol. Centr.-Amer. Dipt. i: n. spp.

*Chasmatonotus univittatus*, Alaska, COQUILLETT, p. 395, P. Washington Ac. ii, n. sp.

*Chironomus*: structure and development, MIALl & HAMMOND (907); *C. tentans*, characters, KIEFFER, p. 828, Ann. Soc. ent. France xxviii.

*C. apfelbecki*, p. 664, *rhacusensis*, p. 665, S.E. Europe, STROBL, Wiss. Mitt. Bosnien vii, n. spp.

*Clunio bicolor*, Normandy, KIEFFER, Bull. Soc. Rouen, Nov. 8th, 1900, n. sp.

*Corynoneura celeripes* and *atra* are sexes of one species, KIEFFER, p. 825, Ann. Soc. ent. France lxviii.

*Diamesa præcox*, Bitche, KIEFFER, p. 820, t. c. n. sp.

*Eutanyus borealis*, as a midwinter fly in New Mexico, COCKERELL, p. 430, Ent. News Philad. xi.

*Heteromyia clavata*, Mexico, WILLISTON, p. 225, Biol. Centr.-Amer. Dipt. i, n. sp.

- Metriocnemus atratulus*, generic characters, KIEFFER, p. 827, *Ann. Soc. ent. France* lxxviii.  
*Orthocladius kervillei*, Calvados, in salt water, p. 821, *barbatus*, Bitche, p. 824, KIEFFER, t. c. n. spp.  
*Tanyptus castellani*, Spain, STROBL, p. 173, *Wien. ent. Zeit.* xix, n. sp.  
*Tanytarsus flavipes*, characters, KIEFFER, p. 828, *Ann. Soc. ent. France* lxxviii.  
*Telmatogeton alaskensis*, Alaska, COQUILLETT, p. 395, *P. Washington Ac.* ii, n. sp.  
*Thalassomyia frauenfeldi* var. n. *luteipes*, STROBL, p. 173, *Wien. ent. Zeit.* xix, n. sp.

## CULICIDÆ, DIXIDÆ.

- General work on *Culicidæ*, with compilation of descriptions and a few new species, GILES (508).  
 Mosquitoes of N. America, generic and specific synopses, general account, natural history, HOWARD (612).  
 Ovary of *Culex*, LÉCAILLON (806).  
 Effects of blood-sucking on development of eggs, and of fecundation on inoculatory powers, BASILI (75).  
 Life history of a mosquito in Queensland, COLLEDGE (287).  
 Mosquitoes and malaria, see *Economic Entomology*, p. 96.  
 Mode of death of mosquitoes by oil and petroleum, LAVERAN (799).  
 The causes of malaria, ROGERS (1127).  
 The malarial parasite, ROSS & FIELDING-OULD (1130).  
 Relation between presence of *Anopheles* and malarial fever in France and Corsica, LAVERAN (801).  
 Mosquitoes and filaria, BANCROFT (61), GRASSI & NOÉ (518), NOÉ (946).  
*Anopheles*, habits of, GRASSI (517); *A. superpictus*, note, NOÉ, p. 154, pl. i, *Bull. Soc. ent. Ital.* xxxii; *A. maculipennis* Meigen, correct, not *A. claviger* Fab., OSTEN SACKEN, p. 281, *Ent. Mag.* xxxvi.  
*Anopheles* in Africa, much information as to distribution and habits in the malaria reports of the Royal Society Committee, CHRISTOPHERS (257), DANIELS (310), STEPHENS (1281); distinction of *Anopheles* in the various stages from other mosquitoes, HOWARD (612).  
*Anopheles funestus*, W. Africa, p. 162, *lindesayi*, Punjab, p. 166, GILES, Gnats or Mosquitoes; *A. constanti*, Madagascar, LAVERAN, p. 109, *C.R. Soc. Biol.* lii; *A. paludis*, Sierra Leone, THEOBALD, p. 75, *Rep. Malaria Comm. R. Soc. London* i : n. spp.  
*Culex ciliaris*, "house-mosquito" of Australia, mode of rearing, etc., BANCROFT (61); *C. spathopalpis*, physiology of metamorphosis, BERLESE, *Riv. Patol. Veg.* viii, pp. 98-100.  
*C. mimeticus*, Italy, NOÉ, p. 150, *Bull. Soc. ent. Ital.* xxxii; *C. willistoni*, N. America, p. 281, *skusii*, Australia, p. 292, *doleschallii*, Java, p. 338, *melanorhinus*, Egypt, p. 342, GILES, Gnats or Mosquitoes : n. spp.  
*Dixa maculata* varr. *subnebulosa*, *dilatata*, STROBL, p. 174, *Wien. ent. Zeit.* xix.  
*Megarrhina grandiosa*, Mexico, WILLISTON, p. 224, *Biol. Centr.-Amer.* Dipt. i, n. sp.  
*Panoplites* mentioned (not described) as n. g. for *Culex annulipes* etc., THEOBALD (1316, p. 5).  
*Psorophora ciliata*, early stages, HOWARD, pp. 353-357, cuts, *Canad. Ent.* xxii.



## BIBIONIDÆ, SIMULIIDÆ.

- Bibio johannis* var. *nigrifemur*, STROBL, p. 93, Wien. ent. Zeit. xix.  
*Corynoscelis eximia*, note on, MIK, pp. 72, 73, t. c.  
*Dilophus femoratus* var. *andalusiacus*, *D. tenuis* var. *minor*, STROBL, p. 93, t. c.  
*Plecia quadrivittata*, Mexico, WILLISTON, p. 222, Biol. Centr.-Amer. Dipt. i, n. sp.  
*Simulia argenteostriata*, Bosnia, STROBL, p. 648, Wiss. Mitt. Bosnien vii, n. sp.

## BLEPHAROCERIDÆ, RHYPHIDÆ.

- Blepharocera capitata*, life-history, larva, pupa, eyes of the imago and mouth-parts, KELLOGG (684).  
*Liponeura doanei*, California, KELLOGG, p. 39, Psyche ix, n. sp.  
*Olbiogaster* sp. near *cognatus*, p. 229, pl. iv, fig. 6, WILLISTON, Biol. Centr.-Amer. Dipt. i.

## TIPULIDÆ.

- The *Tipulidæ* of New Zealand, 44 species, HUTTON (631).  
*Amalopsis exoloma*, p. 194, *vitripennis*, *disphana*, *ampla*, p. 195, *constans*, p. 196, N. America, DOANE, J. N. York Ent. Soc. viii, n. spp.  
*Bachypremna similis*, Mexico, WILLISTON, p. 229, Biol. Centr.-Amer. Dipt. i, n. sp.  
*Bitacomorpha clavipes*, legs, colour, habits, BRUES, Biol. Bull. i, pp. 155-160.  
*Chionea nivicola*, N. America, DOANE, p. 188, J. N. York Ent. Soc. viii, n. sp.  
*Cryptolabis bisinuatus* (sic), N. America, DOANE, t. c. n. sp.  
*Cylindrotoma juncta*, Alaska, COQUILLET, p. 401, P. Washington Ac. ii ; *C. splendens*, N. America, DOANE, p. 197, J. N. York Ent. Soc. viii : n. spp.  
*Dicranomyia fasciata*, *monilicornis*, *nigrescens*, New Zealand, HUTTON, p. 34, Tr. N. Zealand Inst. xxxii ; *D. ochracea*, *cinerea*, p. 182, *citrina*, *helva*, *isabellina*, p. 183, *brunnea*, *gracilis*, *moniliformis*, p. 184, *fulva*, *stigmata*, *infuscata*, *uplicata*, p. 185, N. America, DOANE, J. N. York Ent. Soc. viii, n. spp.  
*Dicranoptycha borealis*, N. America, DOANE, p. 187, t. c. n. sp.  
*Dicranota argentea*, N. America, DOANE, p. 196, t. c. n. sp.  
*Dolichopezu albipes* (= *sylvicola* Curt.), MIK, p. 145, Wien. ent. Zeit. xix.  
*Elliptera hungarica*, characters, STROBL, p. 660, Wiss. Mitt. Bosnien vii.  
*Eriocera parva*, *austeru*, p. 192, *gibbosa*, *velveta*, p. 193, *antennaria*, *aurata*, p. 194, N. America, DOANE, J. N. York Ent. Soc. viii ; *E. fasciata*, p. 226, pl. iv, fig. 4, *brunneipes*, fig. 5, *flavida*, Mexico, *obsoleta*, Honduras, WILLISTON, Biol. Centr.-Amer. Dipt. i : n. spp.  
*Erioptera comata*, N. America, DOANE, p. 188, J. N. York Ent. Soc. viii, n. sp.  
*Geranomyia caloptera* var. *obscura*, STROBL, p. 213, Wien. ent. Zeit. xix.  
*G. annulipes*, N. Zealand, HUTTON, p. 35, Tr. N. Zealand Inst. xxxii ; *G. distincta*, N. America, DOANE, p. 186, J. N. York Ent. Soc. viii : n. spp.  
*Gnophomyia ferruginea*, Mexico, WILLISTON, p. 226, Biol. Centr.-Amer. Dipt. ii, n. sp.



- Gonomyia minima*, Mostar, STROBL, p. 658, Wiss. Mitt. Bosnien vii; *G. virgata*, N. America, DOANE, p. 189, J. N. York Ent. Soc. viii: n. spp.
- Gynoplistia formosa*, p. 46, *fulgens*, p. 47, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxii, n. spp.
- Limnobia modesta* and *tristis* varr., STROBL, p. 212, Wien. ent. Zeit. xix; *L. hercegovinae*, Jablanica, STROBL, p. 662, Wiss. Mitt. Bosnien vii: n. sp.
- Limnophila argus*, *crassipes*, p. 41, *delicatula*, *marshalli*, p. 42, *umbrosa*, *geographica*, p. 43, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxii; *L. flavipila*, *nigritinea*, *superlineata*, p. 190, *lutea*, *badia*, *indistincta*, p. 191, N. America, DOANE, J. N. York Ent. Soc. viii: n. spp.
- Macromastix fucata*, *pallida*, *montana*, p. 31, *lunata*, *binotata*, p. 32, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxii, n. spp.
- Ornithodes* n. g. near *Tricyphona*, for *O. harrimani* n. sp., Alaska, COQUILLETT, p. 400, P. Washington Ac. ii.
- Pachyrhina hudsoni*, N. Zealand, HUTTON, p. 24, Tr. N. Zealand Inst. xxxii, n. sp.
- Phyllolabis obscuris* (sic), N. America, DOANE, p. 192, J. N. York Ent. Soc. viii, n. sp.
- Polyangæus* n. g. *Amalopina*, p. 196, for *P. maculatus* n. sp., N. America, p. 197, DOANE, t. c.
- Rhamphidia levis*, New Zealand, HUTTON, p. 38, Tr. N. Zealand Inst. xxxii, n. sp.
- Rhypholophus crassipes*, Spain, STROBL, p. 214, Wien. ent. Zeit. xix; *R. flavoculus*, Alaska, COQUILLETT, p. 398, P. Washington Ac. ii; *R. fusiformis*, *manicatus*, p. 187, *lanuginosus*, *fumatus*, p. 188, N. America, DOANE, J. N. York Ent. Soc. viii: n. spp.
- Tanyderus annuliferus*, New Zealand, HUTTON, p. 48, Tr. N. Zealand Inst. xxxii, n. sp.
- Tinemyia* n. g. *Limnophilina*, for *T. margaritifera* n. sp., New Zealand, HUTTON, p. 44, t. c.
- Tipula* sp., notes on structure and natural history of larva, KIEFFER, pp. 131-133, Illustr. Zeitschr. Ent. iv; *T. saginata* var. *obscuriventris*, p. 207, STROBL, Wien. ent. Zeit. xix; *T. atropos* Huds., referred to *Dolichopeza*, HUTTON, p. 24; *T. rufa* Huds., referred to *Gnophomyia*, HUTTON, p. 39, Tr. N. Zealand Inst. xxxii.
- T. sarajevensis*, Bosnia, STROBL, p. 656, Wiss. Mitt. Bosnien vii; *T. pseudo-gigantea*, p. 207, *trifasciculata*, p. 208, *morenae*, p. 209, *acuminata*, p. 211, Spain, STROBL, Wien. ent. Zeit. xix; *T. fulva*, p. 26, *tenera*, p. 29, New Zealand, HUDSON, Tr. N. Zealand Inst. xxxii; *T. strigata*, p. 402, *tenebrosa*, p. 403, *gelida*, *cineracea*, p. 404, Alaska, COQUILLETT, P. Washington Ac. ii; *T. virgulata*, Mexico, WILLISTON, p. 228, Biol. Centr.-Amer. Dipt. i; *T. flavo-annulata*, Patagonia, JACOBS, p. 106, Ann. Soc. ent. Belgique xlv: n. spp.
- Trichocera*, with *ocelli*, IMHOF (637).
- Trimicra andalusiaca*, Spain, STROBL, p. 213, Wien. ent. Zeit. xix, n. sp.
- Trochobola variegata*, p. 36, *pecta*, p. 37, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxii; *T. elegans*, N. America, DOANE, p. 186, J. N. York Ent. Soc. viii: n. spp.

## STRATIOMYIDÆ.

Malpighian tubes, *Stratiomys* larva, VANEY (1349).

Hungarian *Stratiomyidæ* (in Hungarian), KERTÉSZ (699).

*Analcocerus hortulanus*, Mexico, WILLISTON, p. 238, Biol. Centr.-Amer. Dipt. i, n. sp.

- Berisomyia nigrofemorata*, Mexico, p. 230, pl. iv, fig. 7, WILLISTON, t. c. n. sp.  
*Campeprosopa longicornis*, Mexico, p. 239, pl. iv, fig. 11, WILLISTON, t. c. n. sp.  
*Chrysoclora pulchra*, Mexico, WILLISTON, p. 243, t. c. n. sp.  
*Chrysochroma pulchrum*, p. 233, *latifrons*, p. 234, Mexico, WILLISTON, t. c. n. spp.  
*Chrysomya aenea* and *Ulidia clausa*, synonymy and generic position, MIK, p. 19, Wien. ent. Zeit. xix.  
*Cyphomyia lasiophthalma*, pl. iv, fig. 15, *bicarinata*, p. 244, Mexico, WILLISTON, Biol. Centr.-Amer. Dipt. i, n. spp.  
*Engonia consobrina*, sexes, SHARP, p. 389, Willey Results iv.  
*Hermetia concinna*, p. 241, pl. iv, fig. 12, New Mexico and Mexico, *ceria*, Mexico, p. 242, fig. 13, WILLISTON, Biol. Centr.-Amer. Dipt. i, n. spp.  
*Merosargus spatulatus*, *bulbifrons*, pl. iv, fig. 8, *concinatus*, fig. 9, p. 235, WILLISTON, t. c. n. spp.  
*Odontomyia fratella*, p. 246, *concinata*, *O. ? comma*, p. 247, Mexico, WILLISTON, t. c. n. spp.  
*Pecticus figlinus* sexes, variation, WILLISTON, p. 236, t. c.  
*P. maculatus*, *concinus*, Mexico, id. p. 238, t. c. n. spp.  
*Sargus cæsius*, sexes, p. 232, *S. sp.*, p. 231, WILLISTON, t. c.  
*S. cæruleifrons*, New Jersey, JOHNSON, p. 325, Ent. News Philad. xi, n. sp.  
*Stratiomys chameleo*, larval habits, FLORENTIN, p. 274, Ann. Sci. Nat. x;  
*S. erythroceræ* ♂, STROBL, p. 554, Wiss. Mitt. Bosnien vii.

## TABANIDÆ.

- Catalogue of *Tabanidæ* of the world, KERTÉSZ (698).  
Revision of *Pangoninae*, with tabulation of the genera, p. 98, and lists of the species of each, RICARDO, Ann. Nat. Hist. v.  
Mode of destroying *Tabanidæ*, PORTSCHINSKY (1049).  
*Atylotus nigromaculatus*, Pretoria, RICARDO, p. 165, Ann. Nat. Hist. vi, n. sp.  
*Cadicera*; notes on, RICARDO, t. c. p. 100.  
*C. nigrescens*, Zomba, RICARDO, p. 161, t. c. n. sp.  
*Corizoneura longirostris* Hardw., ♂ ♀, RICARDO, p. 168, op. cit. v.  
*C. pallidipennis*, Delagoa Bay, p. 110, pl. i, fig. 3, *umbratipennis*, S. Africa, p. 111, fig. 9, RICARDO, t. c. n. spp.  
*Diatomineura auriflua* Don. (= *P. solida* Walk.), RICARDO, p. 119, t. c.  
*D. leucothorax*, Chili, ead. p. 179, t. c. n. sp.  
*Dicrania*; species, *cervus* Wied. (= *comprehensa* Walk.), RICARDO, t. c. p. 100.  
*Erephrosia aureohirta*, Queensland, RICARDO, p. 116, pl. i, fig. 10, t. c.;  
*E. niger*, p. 292, *rufopilosis*, p. 293, *rufescens*, p. 294, S. America, RICARDO, op. cit. vi : n. spp.  
*Goniops chrysocoma*, Osten Sacken (as *Pangonia*) (= *G. hippoboscoides* Aldr.), HINE, p. 392, Ent. News Philad. xi.  
*Pangonia*; subgenera, and closely allied genera, *Erephrosia*, *Diatomineura*, *Corizoneura*, listed, RICARDO, pp. 106-121, 167-181, Ann. Nat. Hist. v.  
*P. flavescens*, Brazil, p. 174, pl. i, fig. 6, *P. (Erephrosia) auripes*, Para, p. 176, fig. 12, *fulvibialis*, p. 177, fig. 11, Brasil, RICARDO, t. c.;  
*P. semiviridis*, Spain, RICARDO, p. 181, pl. i, fig. 7, t. c.; *P. tricolor*, Somaliland, AUSTEN, p. 7, pl. i, fig. 8, P. Zool. Soc. London 1900 : n. spp.  
*Pelecorynchus darwini*, Chiloe, p. 102, pl. i, fig. 1, *aurantiacus*, Chili, p. 103, fig. 2, RICARDO, Ann. Nat. Hist. v, n. spp.  
*Sackenymia* merged in *Pangonia*, RICARDO, n. 2

- Sciens*; notes on components, RICARDO, p. 103, t. c.  
*S. fuscus*, Bolivia, p. 291, *claripennis*, Peru, p. 292, RICARDO, op. cit. vi : n. spp.  
*Tabanus bromius*, pupal habits, YERBURY, p. xxii, P. ent. Soc. London 1900.  
*T. nyasse*, Fort Johnston, p. 164, *nigrohirtus*, Bonny, p. 165, RICARDO, Ann. Nat. Hist. vi; *T. pruinosis*, *thoracicus*, N. America, HINE, p. 248, Canad. Ent. xxxii : n. spp.  
*Therioptectes politus*, New Jersey, JOHNSON, p. 325, Ent. News Philad. xi, n. sp.

## LEPTIDÆ.

- Leptidæ*; the palaearctic discussed, BECKER, pp. 97-116 and 176, Ent. Nachr. xxvi.  
*Atherix ibis*, presence of "Spürhaare," MIK, p. 148, Wien. ent. Zeit. xix.  
*Leptis maculata* var. n. *obscura*, STROBL, p. 578, Wiss. Mitt. Bosnien vii.  
*Omphalophora* n. g. p. 106, for *O. oculata*, n. sp., N. W. Siberia, p. 107, BECKER, Ent. Nachr. xxvi.  
*Psammorycter vermileo* (= *Leptis cylindracea* Costa), distribution, BEZZI, p. 56, Wien. ent. Zeit. xix.  
*Ptiolina fulva*, N. W. Siberia, p. 110, *pelliticornis*, Italy, p. 113, BECKER, Ent. Nachr. xxvi, n. spp.

## SCENOPINIDÆ.

- Metatrichia* n. g. for *Scenopinus bulbosus* O. S., COQUILLETT, p. 500, Ent. News Philad. xi.  
*Pseudatrichia unicolor*, p. 500, *griseola*, p. 501, New Mexico, COQUILLETT, t. c. n. spp.

## ASILIDÆ, MYDAIDÆ.

- Alcimus cinerascens*, Nyasaland, RICARDO, p. 176, Ann. Nat. Hist. vi, n. sp.  
*Asilus trilobus*, Bosnia, STROBL, p. 576, Wiss. Mitt. Bosnien vii, n. sp.  
*Daulopogon terricola*, New Jersey, JOHNSON, p. 326, Ent. News Philad. xi, n. sp.  
*Holopogon nigrifacies*, Italy, BEZZI, p. 78, Bull. Soc. ent. Ital. xxxii, n. sp.  
*Laparus albicinctus*, Barberton, RICARDO, p. 166, Ann. Nat. Hist. vi, n. sp.  
*Laphria limbinervis*, Bosnia, STROBL, p. 575, Wiss. Mitt. Bosnien vii; *L. aureopilosa*, Durban, RICARDO, p. 171, Ann. Nat. Hist. vi : n. spp.  
*Laphyra* sp., larval habits in Tunis, SEURAT, pp. 30, 31, Ann. Sci. Nat. xi.  
*Lophonotus albofasciatus*, Pretoria, RICARDO, p. 178, Ann. Nat. Hist. vi, n. sp.  
*Microstylum glabrum, elegans*, p. 168, Transvaal, *nigrescens*, p. 169, Angola, RICARDO, t. c. n. spp.  
*Mochtherus flavipes* ♂, note, MIK, p. 20, Wien. ent. Zeit. xix.  
*Ommatius fuscovittatus*, Pretoria, RICARDO, p. 177, Ann. Nat. Hist. vi, n. sp.  
*Perissocerus transcaspicus*, p. 144, *cylindricornis*, p. 145, Transcaspian, PORTSCHINSKY, Horæ Soc. ent. Ross. xxxiii, n. spp.  
*Promachus albicinctus, bicolor*, Pretoria, DISTANT, p. 173, Ann. Nat. Hist. vi, n. spp.  
*Scylaticus rufescens*, Barberton, RICARDO, p. 170, t. c. n. sp.  
*Trichoscelis* n. g. *Dasypogonini*, for *T. burmeisteri*, p. 338, *femorata*, p. 339, n. spp., Argentina, RÖDER, Ent. Zeit. Stettin lxi.

## BOMBYLIIDÆ.

*Anthrax paniscus*, pupal habits, YERBURY, p. xxii, P. ent. Soc. London 1900; *A. edititia*, larval and pupal habits, DAVIDSON, p. 510, Ent. News Philad. xi.

## EMPIDÆ.

*Antheiscopus ribesii*, var. n. *nigripes*, STROBL, p. 564, Wiss. Mitt. Bosnien vii.

*Empis meridionalis*, early stages, KIEFFER, pp. 131-133, Illustr. Zeitschr. Ent. v.

*E. apfelbecki*, p. 567, *thalhammeri*, p. 568, *pseudodecora*, p. 569, *nigritibialis*, p. 570, *trianguligera*, p. 571, Bosnia, STROBL, Wiss. Mitt. Bosnien vii; *E. kerteszi*, Hungary, BEZZI, p. 251, Termes. Fuzetek xxiii; *E. clauda*, p. 407, *pellucida*, p. 408, *fumida*, *infumata*, *brachysoma*, p. 409, *triangula*, p. 410, *conjuncta*, p. 411, Alaska, COQUILLETT, P. Washington Ac. ii: n. spp.

*Gloma scopifera*, Alaska, COQUILLETT, p. 412, t. c. n. spp.

*Hilara dalmatina*, *ternovens*, p. 572, Bosnia, STROBL, Wiss. Mitt. Bosnien vii; *H. aurata*, Alaska, COQUILLETT, p. 411, P. Washington Ac. ii: n. spp.

*Leptopeza setigera*, Italy, BEZZI, p. 82, Bull. Soc. ent. Ital. xxxii, n. spp.

*Microphorus atratus*, p. 412, *flavipilosus*, *crocatus*, p. 413, Alaska, COQUILLETT, P. Washington Ac. ii, n. spp.

*Platypalpus diversipes*, *gilvipes*, Alaska, COQUILLETT, p. 422, t. c. n. spp.

*Rhamphomyia siebecki*, p. 564, *klekovacensis*, *albidiventris*, p. 565, *anthracinella*, p. 566, Bosnia, STROBL, Wiss. Mitt. Bosnien vii; *R. villipes*, p. 414, *disparilis*, p. 415, *glauca*, *cineracea*, p. 416, *limata*, *barypoda*, p. 417, *albopilosa*, *adversa*, p. 418, *cinefacta*, p. 419, *anthracodes*, *atrata*, p. 420, *macrura*, p. 421, Alaska, COQUILLETT, P. Washington Ac. ii: n. spp.

*Sciodromia pectinulata*, Bosnia, STROBL, p. 561, Wiss. Mitt. Bosnien vii, n. sp.

*Tachydromia stroblii* n. n. for *T. beckeri* Strobl nec Milk, Milk, p. 148, Wien. ent. Zeit. xix.

## DOLYCHOPODIDÆ.

Revision of N. American *Dolichopodidae*, WHEELER, pp. 1-84, 4 pls. P. Calif. Ac. ii.

Note on setulæ acrostichales, Milk, p. 151, Wien. ent. Zeit. xix.

*Aphantotimus* (and probably *Xanthotricha*) merged in *Thrypticus*, WHEELER, p. 30, P. Calif. Ac. ii.

*Asyndetus syntormoides*, Massachusetts, WHEELER, p. 32, P. Calif. Ac. ii, n. sp.

*Campsicnemus degener*, p. 58, *philoctetes*, p. 59, *œdipus*, p. 60, *thersites*, p. 61, N. America, WHEELER, t. c. n. spp.

*Chrysotus barbatus* Loew = (*apicalis* Aldr.), ALDRICH, p. 533, Ent. News Philad. xi.

*Diaphorus spectabilis* = (*approximatus* Aldr.), ALDRICH, t. c.

*Dolichopus barycnemus*, p. 424, *varipes*, p. 425, Alaska, COQUILLETT, P. Washington Ac. ii; *D. sincerus*, *misellus*, N. America, MELANDER, p. 136, Canad. Ent. xxxii; *D. partitus*, p. 135, *paluster*, p. 136, *in-tentus*, p. 137, *calaisius*, p. 138, *enigma*, n. 139, *maius*, n. 140, *pernix*, p. 141, *pantomimus*, p. 142, *var*

- amphericus*, p. 146, N. America, MELANDER & BRUES, Biol. Bull. i : n. spp.
- Gymnopternus mirificus*, Massachusetts, MELANDER, p. 137, Canad. Ent. xxxii, n. sp.
- Hercostomus procerus*, p. 8, pl. i, figg. 9, 10, *impudicus*, p. 10, figg. 11-13, California, WHEELER, P. Calif. Ac. ii ; *H. vetitus*, p. 138, *anarmostus*, p. 139, N. America, MELANDER, Canad. Ent. xxxii : n. spp.
- Hygrocleuthus* merged in *Dolichopus*, MELANDER & BRUES, Biol. Bull. i, pp. 123, 124.
- H. wheeleri*, p. 126, *amnicola*, p. 130, N. America, MELANDER & BRUES, t. c. ; *H. aldrichii*, p. 3, pl. i, figg. 1-3, *consanguineus*, p. 5, figg. 5-7, N. America, WHEELER, P. Calif. Ac. ii : n. spp.
- Hydrophorus algens*, p. 63, *eldoradensis*, p. 65, *agalma*, p. 66, *magdalena*, p. 67, *sodalis*, p. 68, N. America, WHEELER, t. c. n. spp.
- Hypocharassus* Mik=(*Drepanomyia* Wheeler), *H. gladiator*=(*D. johnsonii* Wheeler), MIK, p. 21, Wien. ent. Zeit. xix ; *Hypocharassus* Mik=(*Drepanomyia* Wh.), *H. gladiator* Mik=(*D. johnsonii* Wh.), ♀ described, WHEELER, pp. 423, 424, Ent. News Philad. xi.
- Medeterus ruficornis*, Bosnia, STROBL, p. 583, Wiss. Mitt. Bosnien vii ; *M. petulcus*, p. 21, *aberrans*, p. 22, *maurus*, p. 23, *viduus*, *aldrichii*, p. 24, *princeps*, p. 25, *californiensis*, *cyanogaster*, p. 27, *xenophilus*, p. 28, *aurivittatus*, *appendiculatus*, p. 29, N. America, WHEELER, P. Calif. Ac. ii : n. spp.
- Mesorhaga* Schin.=(*Aptorthus* Aldr.), ALDRICH, p. 531, Ent. News Philad. xi.
- Nematoproctus venustus*, N. America, MELANDER, p. 142, Canad. Ent. xxxii, n. sp.
- Neurigona floridula*, p. 72, *lienosa*, p. 73, WHEELER, P. Calif. Ac. ii, n. spp.
- Nothosympyenus* n. g., p. 51, for *N. fortunatus*, p. 52, *vegetus*, p. 53, *sobrinus*, p. 54, *oreas*, p. 55, n. spp., N. America, and *S. nodatus* Loew, WHEELER, t. c.
- Paracilus hybridus*, Massachusetts, MELANDER, p. 141, Canad. Ent. xxxii ; *P. propinquus*, Florida, WHEELER, p. 18, P. Calif. Ac. ii : n. spp.
- Parasyntormon* n. g., p. 41, for *P. asellus*, p. 42, *lagotis*, p. 43, *lunulus*, p. 44, *emarginatum*, p. 45, *montivagum*, p. 46, n. spp., N. America, and *Sympyenus occidentalis* Aldr., WHEELER, t. c.
- Pelastoneurus neglectus*, p. 12, pl. i, fig. 14, *occidentalis*, fig. 20, *floridanus*, pl. ii, fig. 26, p. 13, *pictipennis*, p. 14, *dissimilipes*, p. 16, *cyanus*, p. 17, N. America, WHEELER, t. c. ; *P. wheeleri*, Texas, MELANDER, p. 140, Canad. Ent. xxxii : n. spp.
- Polymedon castus*, Arizona, WHEELER, p. 6, P. Calif. Ac. ii, n. sp.
- Porphyrops xipherea*, *effilatus*, N. America, WHEELER, p. 34, t. c. n. spp.
- Schenophilus* Mik, queried, WHEELER, p. 69, t. c.
- Sympyenus marcidus*, p. 48, *cuprinus*, p. 50, *pugil*, p. 51, N. America, WHEELER, t. c. n. spp.
- Synarthrus* and *Syntormon*, distinctions invalid, MIK, p. 20, Wien. ent. Zeit. xix.
- S. affinis*, p. 38, *strategus*, p. 39, N. America, WHEELER, P. Calif. Ac. ii, n. spp.
- Tachytrechus volitans*, *protervus*, N. America, MELANDER, p. 143, Canad. Ent. xxxii, n. spp.
- Teuchophorus clavigerellus*, Dakota, WHEELER, p. 57, P. Calif. Ac. ii, n. sp.
- Thinophilus achilleus*, Sardinia, MIK, p. 79, Wien. ent. Zeit. xix ; *T. neglectus*, New Jersey, WHEELER, p. 70, P. Calif. Ac. ii : n. spp.
- Thrypticus* Gerst.=(*Aphantotimus* Wh.=*Xanthotricha* Aldr.), ALDRICH, p. 532, Ent. News Philad. xi.

## LONCHOPTERIDÆ.

*Lonchoptera* ; structure of larva and pupa, relations of the family, DE MEIJERE (886).

## PLATYPEZIDÆ, PIPUNCULIDÆ.

*Callomyia amœna*, larva, DE MEIJERE, pp. 223–231, pl. xiii, Tijdschr. Ent. xliii.

*Pipunculidæ*: supplement, with extended tables and list of exotic, BECKER, Berlin. ent. Zeitschr. xlv, pp. 215–252.

*Pipunculus opacus* referred to *Verrallia*, *P. houghi* n. n. for *lateralis* Walk., *P. willistoni* n. n. for *aculeatus* Willist., *P. holosericeus* and *annulipes* synonymical notes, KERTÉSZ, pp. 244, 245, Wien. ent. Zeit. xix.

*P. loewii* n. n. for *fasciatus* Lw., KERTÉSZ, p. 270 ; *P. arimosus*, Germany, *trochanteratus*, Egypt, p. 221, *trapezoides*, Hungary, p. 223, *fluvialis*, Egypt, p. 224, *straminipes*, Italy, p. 225, *vestitus*, Silesia, p. 230, *ultimus*, Italy, p. 231, *signatus*, Hungary, p. 232, *pilosiventris*, Egypt, p. 236, *vicinus*, p. 238, *disjunctus*, p. 239, *nitidifrons*, p. 241, Egypt, *angustifrons*, Peru, p. 246, *hepaticolor*, Singapore, p. 247, *brunnipennis*, p. 248, *lætus*, p. 249, Peru, BECKER, Berlin. ent. Zeitschr. xlv : n. spp.

## SYRPHIDÆ.

Syrphidæ of Quebec, CHAGNON (233).

*Syrphidæ* attracted by the colours of flowers ? PLATEAU (1041).

*Catantopha pyrastris* bred from *Lepidoptera* pupæ, BLOOMFIELD, p. 244, Ent. Mag. xxxvi.

*Chilosia borealis*, Alaska, COQUILLETT, p. 426, P. Washington Ac. ii, n. sp.

*Criorhina tricolor*, Alaska, COQUILLETT, p. 436, t. c. n. sp.

*Eristalis tenax*, WRIGHT (1419).

*E. croceimaculata*, Patagonia, JACOBS, p. 107, Ann. Soc. ent. Belgique xlv, n. sp.

*Eumerus speculifer*, New Britain, SHARP, p. 390, pl. xxxv, fig. 10, Willey Results iv, n. sp.

*Melanostoma hyalinatum*, larval habits, DE MEIJERE, Ent. Tijdschr. xliii, p. 8.

*Merodon equestris* varr., *nigrithorax* n., BEZZI, p. 89, Bull. Soc. ent. ital. xxxii ; *M. mucronatus* Rond. var. n. *trebevicensis*, STROBL, p. 594, Wiss. Mitt. Bosnien vii.

*Microdon pictipenne*, New Britain, SHARP, p. 390, Willey Results iv ; *M. sharpii* n. n. for *pictipennis* Sharp nec Macq., MIK, p. 148, Wien. ent. Zeit. xix.

*Platychirus tenebrosus*, p. 428, *æreatus*, p. 430, Alaska, COQUILLETT, P. Washington Ac. ii, n. spp.

*Psilota rotundicornis*, Bosnia, STROBL, p. 586, Wiss. Mitt. Bosnien vii, n. sp.

*Syritta pipiens*, structural notes, WESCHÉ, pp. 33, 34, Knowledge 1900.

*Syrphus bifasciatus* var. n. *trifasciatus*, STROBL, p. 590, Wiss. Mitt. Bosnien vii.

*S. gracilis*, Alaska, COQUILLETT, p. 432, P. Washington Ac. ii, n. sp.

## PHORIDÆ (incl. STETHOPATHIDÆ).

*Phora rufipes*, natural history, KIEFFER n. 241. Illustr. Zeitschr. Ent. v.

*P. posticata*, Ragusa, STROBL. n. vii ; *P. grandis*, Greenland, J. n. spp.

1900. [r]



*Termitoxenia* n. g. *Stethopathidarum*, p. 601, for *T. havilandi*, *heimi*, p. 602, *mirabilis*, *braunsi*, p. 603, n. spp., S. Africa with *Termitida*, fuller details, pp. 609, 611, pl. iii, WASMANN, Zeitschr. wiss. Zool. lxvii.

## CESTRIDÆ.

*Cestridæ*: clinical bibliography, HUBER (618).

*Hypoderma bovis* attacking man in Norway, SCHÖYEN (1159).

*Gasterophilus equi, salutaris* in Australia, larvæ, FROGGATT, pp. 947-951, pl., Agric. Gaz. N. S. W. xi.

*Gasterophilus epilepsalis*, N. America, larva only, FRENCH, p. 263, Canad. Ent. xxxii, n. sp.

*G. epilepsalis*, protested against, ALDRICH, p. 318, t. c.

## MUSCIDÆ CALYPTRATÆ.

STEIN records the results of an examination of the collection of Meigen at Paris, *Tachinidæ* and *Anthomyidæ*, mentioning each species in alphabetical order, Ent. Nachr. xxvi, pp. 129-157.

Notes on and replies to Mik's criticisms on his work on the Meigen types of *Anthomyidæ*, STEIN, pp. 246-248, Wien. ent. Zeit. xix.

Meigen's types, VILLENEUVE (1358) cf. *Exorista*, *Phorocera*, *Manicera*, *Miltogramma*.

Synonymy of numerous species of PANDELLÉ, VILLENEUVE, pp. 402, 403, Bull. Soc. ent. France 1900.

List of Calyptrate *Muscidæ* of Belgium, JACOBS (638).

The Muscid flies of human excrement; a contribution to the natural history of numerous species, HOWARD (611).

*Muscidæ*: clinical bibliography, HUBER (618).

Physiology of metamorphosis of *Calliphora* and *Cyrtoneura*, BERLESE (103); for other memoirs see Development, p. 88.

Abstract of SASAKI on *Ugimya sericarice*, MÉNÉGAUX (895).

*Anthomyia hyoscyami* var. n. *trebinjensis*, STROBL, p. 612, Wiss. Mitt. Bosnien vii.

*A. mystacea*, Alaska, COQUILLETT, p. 447, P. Washington Ac. ii, n. sp.

*Aricia pullata*, p. 271, *austriaca*, p. 272, *steinii*, p. 273, Austria, CZERNY, Wien. ent. Zeit. xix; *A. setigera*, Sweden, p. 305, *regalis*, Caucasus, p. 306, *humerella*, Siebenbürgen, p. 307, STEIN, Ent. Nachr. xxvi : n. spp.

*Atherigona flexinervis*, p. 154, *nigripes*, p. 155, *pallicornis*, p. 156, *trilineata*, New Guinea, *exigua*, Singapore, p. 157, STEIN, Termes. Fuzetek xxiii, n. spp.

*Belvoisia luteola*, Puerto Rico, COQUILLETT, p. 253, P. U. S. Mus. xxii, n. sp.

*Chirosia glauca*, Alaska, COQUILLETT, p. 452, P. Washington Ac. ii, n. sp.

*Chorthophila buccata*, habits, PIFFARD, p. 190, Ent. Mag. xxxvi and EVANS, t. c., p. 243.

*C. nuda*, Siebenbürgen, p. 314, *crinitarsata*, Rügen, p. 316, *triticiperda*, Budapest, p. 317, STEIN, Ent. Nachr. xxvi; *C. tarsifimbria*, pp. 249 & 279, *concomitans*, pp. 251 & 287, *pygialis*, p. 252, *excavans*, p. 253, *quintilis*, *rhinomete*, pp. 253 & 279, *curtinusuta*, *rubiginans*, p. 254, *inæqua*, pp. 255 & 272, *biumbrosa*, pp. 256 & 274, *cyclicans*, p. 256, *discussa*, pp. 257, 277, 282, *insperata*, p. 260, *quinquevirgata*, *longipilis*, p. 261, *interflua*, p. 262, *dilaminata*, p. 263, *nuceicornis*, pp. 264 & 288, *impublicollis*, p. 265, *nigroneitens*, *congenerata*, p. 266, *dentiens*, pp. 268 & 290, *dejecta*, p. 273, *gentiane*, *litigata*, p. 274, *impublicollis*, *separabilis*, p. 276, *excavans*, *spatulans*, p. 278, *excubans*, p. 282,

- palnodes*, p. 284, *nasutula*, *diducta*, p. 285, *margaritans*, p. 288, *orbitalis*, p. 289, *retrostimulea*, p. 290, Europe, PANDELLÉ, *Muscides* iii : n. spp.
- Coenosia longitarsis*, Amsterdam, STEIN, p. 323, Ent. Nachr. xxvi; *C. incisa*, p. 146, *pectinata*, *C. (Pygophora) lobata*, p. 147, New Guinea, *C. brevicornis*, p. 149, Singapore, *parvisquama*, p. 150, *pumilio*, p. 151, New Guinea, STEIN, Termes. Fuzetek xxiii; *C. compressicauda*, Celebes, STEIN, p. 391, Ann. Mus. Genova xl; *C. varicornis*, Puerto Rico, COQUILLETT, p. 256, P. U. S. Mus. xxii : n. spp.
- Dasyphora saltuum* and *pastorum* distinguished, HOUGH, p. 249, Termes. Fuzetek xxiii.
- Egle sextana*, p. 239, *rondania*, p. 240, *trigonigaster*, p. 242, Europe, PANDELLÉ, *Muscides* iii, n. spp.
- Exorista*; study of Meigen's types, VILLENEUVE, pp. 158-161, Bull. Soc. ent. France 1900.
- Gymnochoristonma* subg. n. of *Homalomyia*, STROBL, p. 613, Wiss. Mitt. Bosnien vii.
- Hematobia irritans*, its synonyms=(*atripalpis* Bezzi), HOUGH, p. 250, Termes. Fuzetek xxiii.
- Homalomyia scalaris*, larval structures, VOGLER, pp. 273-276, Illustr. Zeitschr. Ent. v.
- H. flavivaria*, Alaska, COQUILLETT, p. 446, P. Washington Ac. ii; *H. penicillaris*, p. 205, *obscurinervis*, p. 207, *dasyops*, p. 209, *abnormis*, p. 210, Bolivia, STEIN, Termes. Fuzetek xxiii : n. spp.
- Hydrophoria speculiventris*, p. 221, *patellans*, p. 222, *detergens*, *querenda*, p. 229, *subcalva*, p. 230, *acerba*, *stimulea*, *biciliaris*, p. 232, *bicalcurea*, p. 233, *flabellifera*, p. 234, *uniciliata*, *vacans*, p. 235, *lophota*, p. 236, Europe, PANDELLÉ, *Muscides* iii, n. spp.
- Hyetodesia varipes*, p. 441, *villicrura*, p. 443, Alaska, COQUILLETT, P. Washington Ac. ii, n. sp.
- Hylemyia cinerella*; *Anthomyia lychnidis* Kalt. is a synonym, MIK, p. 148, Wien. ent. Zeit. xix.
- H. tristriata*, p. 310, *lamelliseta*, p. 312, Genthin, STEIN, Ent. Nachr. xxvi; *H. spiniventris*, p. 449, *simpla*, p. 450, Alaska, COQUILLETT, P. Washington Ac. ii : n. spp.
- Hystericia triangulifera*, Patagonia, JACOBS, p. 107, Ann. Soc. ent. Belgique xlv, n. sp.
- Lasiops triseriata*, Trieste, STEIN, p. 309, Ent. Nachr. xxvi; *L. calvicrura*, Alaska, COQUILLETT, p. 444, P. Washington Ac. ii : n. spp.
- Lispe metatarsata*, New Guinea, p. 152, *vittata*, Singapore, p. 153, STEIN, Termes. Fuzetek xxiii; *L. cyrtoneurina*, N. Guinea, STEIN, p. 393, Ann. Mus. Genova xl : n. spp.
- Lucilia illustris* is var. of *sylvarum*, and *nobilis* var. of *sericata*, HOUGH, p. 249, Termes. Fuzetek xxiii.
- Masicera*; study of Meigen's types, VILLENEUVE, pp. 161, 162, Bull. Soc. ent. France 1900; *M.* sp. parasitic on *Apogonia* in Java, ZEHNTNER, (1426) pp. 18-23, pl., figg. 16-19.
- Miltogramma*, study of Meigen's types, VILLENEUVE, pp. 380 etc., Bull. Soc. ent. France 1900.
- Musca domestica*, habits, relations to typhoid fever, HOWARD, pp. 569-573, P. Washington Ac. ii.
- Onesia*, notes on the species, HOUGH, p. 248, Termes. Fuzetek xxiii.
- Ophyra chalcogaster*, characters, STEIN, p. 131, t. c.
- O. granlandica*, Greenland, LUNDBECK, p. 261, Vid. Medd. 1900, n. sp.
- Paraphyto borealis*, Alaska, COQUILLETT, p. 439, P. Washington Ac. ii, n. sp.
- Pegomyia crassicauda*, Bohemia, p. 390  
Ent. Nachr. xxvi, n. spp. 322, STEIN,



- Phorbia biciliata*, Alaska, COQUILLETT, p. 451, P. Washington Ac. ii, n. sp.  
*Phorocera*, study of Meigen's types, VILLENEUVE, Bull. Soc. ent. France 1900, p. 161.  
*Pollenia atramentaria, depressa*, queried, HOUGH, p. 249, Termes. Fuzetek xxiii.  
*Prosalpia piliarsis*, Hungary, STEIN, p. 313, Ent. Nachr. xxvi, n. sp.  
*Sarcophaga*, study of Meigen's types, VILLENEUVE, pp. 363, 364, Bull. Soc. ent. France 1900.  
*S. diversipes*, Puerto Rico, COQUILLETT, p. 255, P. U. S. Mus. xxii, n. sp.  
*Sarcophila* larvæ in human intestine, PERRONCITO (1992).  
*Spilogaster pollinosa*, Croatia, STEIN, p. 308, Ent. Nachr. xxvi; *S. concolor*, p. 180, *vicina*, Austria, CZERNY, Wien. ent. Zeit. xix; *S. rufa*, p. 132, *annulata*, p. 133, *rufescens, maculata*, p. 134, *crassicauda*, p. 135, *curvinervis, incerta*, p. 136, *bilineata*, p. 137, *arminervis*, p. 138, *diluta, rigidiseta*, p. 139, *unistriata*, p. 141, New Guinea, *nigrithorax*, Singapore, p. 142, *duplex, excellens*, p. 143, *flavicoxa*, p. 144, *polita*, p. 145, New Guinea, STEIN, Termes. Fuzetek xxiii; *S. marginata*, p. 374, *marginiquama*, p. 375, *vittata*, p. 376, *incerta*, p. 377, *bi-fasciata*, p. 378, *albolineata*, p. 379, *lævis*, p. 380, *pellucida*, p. 381, *nigrolineata*, p. 382, *strigilata*, p. 383, *helomyzina*, p. 384, New Guinea, *setinervis*, New Pomerania, p. 385, *propingua*, Amboina, p. 386, *unicolor*, p. 387, *flavibasis*, p. 388, *fasciata*, p. 389, *insignis*, p. 390, New Guinea, STEIN, Ann. Mus. Genova xl : n. spp.  
*Tachina civilis* Rond., characters, VILLENEUVE, p. 401, Bull. Soc. ent. France 1900.  
*Viviana pacta*, habits, PORTA (1047).

## MUSCIDÆ ACALYPTRATÆ.

- Physiology of metamorphosis, *Drosophila*, larval anatomy, nymph, BERLESE, Riv. Patol. Veg. viii, pp. 83–86.  
*Acrosticta fulvipes*, California, COQUILLETT, p. 24, J. N. York Ent. Soc. viii, n. sp.  
*Agomyza*; n. varr. of Spanish species, STROBL, pp. 61–64, Wien. ent. Zeit. xix.  
*A. pulicarioides*, Spain, STROBL, p. 63, Wien. ent. Zeit. xix; *A. trebinjensis*, p. 640, *proboscidea*, p. 641, Bosnia, STROBL, Wiss. Mitt. Bosnien vii; *A. arctica*, Greenland, LUNDBECK, p. 304, cut, Vid. Medd. 1900 : n. spp.  
*Amphicnephes fasciola*, Kansas, COQUILLETT, p. 21, J. N. York Ent. Soc. viii, n. sp.  
*Anthomyza nigrimana*, Puerto Rico, COQUILLETT, p. 264, P. U. S. Mus. xxii, n. sp.  
*Apterina polita* characters and position, MIK, p. 71, Wien. ent. Zeit. xix.  
*Aulacigaster leucopeza* (= *rufitarsis* Mcq.), MIK, p. 20, t. c.  
*Canace saloniata*, Salona, STROBL, p. 63, Wiss. Mitt. Bosnien vii, n. sp.  
*Cephalia fenestrata*, Kansas, COQUILLETT, p. 24, J. N. York Ent. Soc. viii, n. sp.  
*Ceratomyza denticornis* varr., STROBL, p. 64, Wien. ent. Zeit. xix.  
*Chetopsis apicalis*, N. America, JOHNSON, p. 326, Ent. News Philad. xi, n. sp.  
*Chyliza vittata*, note on habits, GIARD, p. 316, Bull. Soc. ent. France 1900.  
*Cladocheata* n. g. *Drosophilidæ*, for *C. nebulosa* n. sp., Puerto Rico, COQUILLETT, p. 263, P. U. S. Mus. xxii.  
*Clasiopa calceata* var. *flavoantennata*, STROBL, p. 1, Wien. ent. Zeit. xix.  
*Clista*, study of Meigen's types, VILLENEUVE, p. 381, Bull. Soc. ent. France 1900.

- Desmometopa halteralis*, Puerto Rico, COQUILLETT, p. 267, P. U. S. Mus. xxii, n. sp.
- Diptotoxa dalmatina*, Dalmatia, STROBL, p. 628, Wiss. Mitt. Bosnien vii, n. sp.
- Drosophila unistriata*, Bosnia, STROBL, p. 636, Wiss. Mitt. Bosnien vii; *D. fusca*, Puerto Rico, COQUILLETT, p. 264, P. U. S. Mus. xxii: n. spp.
- Ensina luculenta*, pl. xii, fig. 17, *conspersa*, fig. 18, p. 417, *despecta*, fig. 19, *mediana*, fig. 20, *guttularis*, fig. 21, p. 418, Mexico, WULP, Biol. Centr.-Amer. Dipt. ii, n. spp.
- Epiplatea scutellaris*, California, COQUILLETT, p. 25, J. N. York Ent. Soc. viii, n. sp.
- Euaresta crenulata*, p. 423, *rufula*, p. 424, *angustipennis*, *scitula*, *sobrinata*, p. 425, Mexico, WULP, Biol. Centr.-Amer. Dipt. ii, n. spp.
- Euxesta willistoni* n. n. for *spoliata* Willist. nec Loew; COQUILLETT, p. 24, J. N. York Ent. Soc. vi.
- Fucellia intermedia*, Greenland, LUNDBECK, p. 291, p. 293 cuts, Vid. Medd. 1900, n. sp.
- Gastrops nebulosus*, N. America, COQUILLETT, p. 34, Canad. Ent. xxxii, n. sp.
- Gaurax lancifer*, Puerto Rico, COQUILLETT, p. 265, P. U. S. Mus. xxii, n. sp.
- Giraffomyia* n. g. aberrant near *Phytalmia*, p. 391, for *G. willeyi* n. sp., New Britain, p. 392, pl. xxxv, figg. 12-126, SHARP, Willey Results iv.
- Griphoneura atricornis*, p. 396, *distincta*, *fuscipes*, p. 397, *testaceipes*, p. 398, *flavicornis*, p. 399, New Guinea, KERTÉSZ, Termes. Fuzetek xxiii, n. spp.
- Halterophora capitata*, "the West Australian Fruit fly," FRENCH, pp. 163-169, Rep. Dep. Agric. Victoria 1899.
- Helomyza oxyphora*, Austria, MIK, p. 128, Wien. ent. Zeit. xix, n. sp.
- Hippelates tener*, Puerto Rico, COQUILLETT, p. 265, P. U. S. Mus. xxii, n. sp.
- Hyadina guttata* var., STROBL, p. 2, Wien. ent. Zeit. xix.
- H. albovenosa*, N. America, COQUILLETT, p. 34, Canad. Ent. xxxii, n. sp.
- Hydrellia nigricans* var. *hispanica*, STROBL, p. 1, Wien. ent. Zeit. xix.
- H. gilvipes*, Puerto Rico, COQUILLETT, p. 261, P. U. S. Mus. xxii, n. sp.
- Lamprogaster austeni*, New Britain, SHARP, p. 391, pl. xxxv, figg. 11-11c, Willey Results iv, n. sp.
- Limosina ciliosa*, larval structures, VOGLER, pp. 289-292, Illustr. Zeitschr. Ent. v.
- L. plurisetosa*, *andalusiaca*, Spain, STROBL, p. 69, Wien. ent. Zeit. xix, n. sp.
- Lobioptera albomaculata*, Spain, STROBL, p. 9, t. c. n. sp.
- Lunigera* n. g. for *Setanocera choerophylli* Fab., HENDEL, p. 344, Verh. Ges. Wien I.
- Monochatophora* n. g. for *Tetanocera umbrarum* (L.), HENDEL, p. 355, t. c.
- Myiophasia flava*, W. Australia, COQUILLETT, p. 390, P. Linn. Soc. N. S. Wales xxv, n. sp.
- Neuspilota achillea*, N. America, JOHNSON, p. 328, Ent. News Philad. xi, n. sp.
- Norellia*, synonymy and characters of British species, YERBURY, pp. 199-202, Ent. Mag. xxxvi.
- Nostima* n. g. *Hydrellina*, for *N. slosonæ* n. sp., Florida, COQUILLETT, p. 35, Canad. Ent. xxxii.
- Noterophila acutipennis* var. *nigripes*, STROBL, p. 5, Wien. ent. Zeit. xix.
- Notiphila virgata*, Puerto Rico, COQUILLETT, p. 259, P. U. S. Mus. xxii, n. sp.
- Oethiphila coronata* var. *nigripes*, STROBL, p. 9, Wien. ent. Zeit. xix.
- Oedoparea glauca*, Alaska, COQUILLETT, p. 458, P. Washington Ac. ii, n. sp.

- Ophthalmomyia cinerea*, Puerto Rico, COQUILLETT, p. 268, P. U. S. Mus. xxii, n. sp.
- Opomyza thalhammeri*, Bosnia, STROBL, p. 637, Wiss. Mitt. Bosnien vii, n. sp.
- Ortalis basalis* Walk. referred to *Euxesta*, COQUILLETT, p. 24, J. N. York Ent. Soc. viii.
- Oscinis obscura*, Puerto Rico, COQUILLETT, p. 266, P. U. S. Mus. xxii, n. sp.
- Paratissa* n. g. for *Drosophila pollinosa* Willist., COQUILLETT, p. 36, Canad. Ent. xxxii.
- Paroedopa* n. g. *Ortalida*, p. 22, for *P. punctigera* n. sp., Arizona, p. 23, COQUILLETT, J. N. York Ent. Soc. viii.
- Phytomyza morena*, p. 65, *nevadensis*, p. 66, Spain, STROBL, Wien. ent. Zeit. xix; *P. balcanica*, *thalhammeri*, Bosnia, STROBL, p. 643, Wiss. Mitt. Bosnien vii; *P. betæ*, W. Australia, COQUILLETT, p. 389, P. Linn. Soc. N. S. Wales xiv : n. spp.
- Piophilina nigerrima*, Greenland, LUNDBECK, p. 301, Vid. Medd. 1900, n. sp.
- Pogonota kincaidi*, Alaska, COQUILLETT, p. 455, P. Washington Ac. ii, n. sp.
- Psilopa flavida*, *varipes*, *similis*, N. America, COQUILLETT, p. 33, Canad. Ent. xxxii; *P. mellipes*, Puerto Rico, COQUILLETT, p. 260, P. U. S. Mus. xxii : n. spp.
- Ptilomyia* n. g. *Ephydridæ*, p. 261, for *P. enigma* n. sp., Puerto Rico, p. 262, COQUILLETT, t. c.
- Pyrgota chagnoni*, Montreal, JOHNSON, p. 246, Canad. Ent. xxxii, n. sp.
- Renocera* n. g. near *Tetanocera*, p. 333, for *R. stroblii*, p. 333, *sintenisiana*, p. 334, n. spp., Europe, HENDEL, Verh. Ges. Wien I.
- Rhinoëssa alboguttata*, p. 6, *albosetulosa*, p. 7, Spain, STROBL, Wien. ent. Zeit. xix, n. spp.
- Rivellia bosci*=(*Urophora interrupta* Macq.), *R. viridulans*=(*Ortalis bipars* Walk.), COQUILLETT, p. 22, J. N. York Ent. Soc. viii.
- R. floridana*, Florida, JOHNSON, p. 247, Canad. Ent. xxxii; *R. brevifasciata*, New Jersey, JOHNSON, p. 326, Ent. News Philad. xi; *R. basilaris*, Colorado, COQUILLETT, p. 21, J. N. York Ent. Soc. viii : n. spp.
- Sapromyza sexseriata*, *gestroi*, New Guinea, p. 369, *ternatensis*, Ternate, *elegans*, *impar*, p. 370, *punctulata*, *beccarii*, p. 371, *halterata*, *pulchripennis*, p. 372, *morokana*, p. 373, New Guinea, KERTÉSZ, Ann. Mus. Genova xl; *S. varia*, p. 257, *pulcherrima*, p. 258, *nobilis*, p. 259, *horvathi*, p. 260, *singaporensis*, *dubia*, p. 261, *pubiseta*, p. 262, *minuta*, *nudiseta*, *busipunctata*, p. 263, *signatifrons*, *astrolabei*, *papuana*, p. 264, *chyzeri*, *nigrifrons*, p. 265, *limbata*, *quadristrigata*, New Guinea, *beckeri*, Singapore, p. 266, *quinquepunctata*, p. 268, *tropica*, *hypocrita*, p. 269, *stroblii*, *ratzii*, p. 270, *novæguineæ*, p. 271, *orientalis*, p. 272, *loriæ*, p. 273, *biroi*, *decemseriata*, p. 274, *distincta*, *erimæ*, *sattelbergensis*, p. 275, New Guinea, KERTÉSZ, Termes. Fuzetek xxiii : n. spp.
- Scatella setosa*, Alaska, COQUILLETT, p. 462, P. Washington Ac. ii, n. sp.
- Scatophaga lanata*, Greenland, LUNDBECK, p. 294, Vid. Medd. 1900; *S. frigida*, Alaska, COQUILLETT, p. 454, P. Washington Ac. ii : n. spp.
- Scatophila quadrilineata*, Spain, STROBL, p. 4, Wien. ent. Zeit. xix; *S. unicornis*, Austria, CZERNY, p. 205, t. c. n. spp.
- Sciomyza cinerella* var. n. *meridionalis*, STROBL, p. 619, Wiss. Mitt. Bosnien vii.
- S. mikiana*, Triest, HENDEL, p. 89, Wien. ent. Zeit. xix; *S. mikiana*, habitat, Mik, p. 145, t. c. : n. sp.
- Scioptera vibrans*=(*Ortalis diopsoides* Walk.), COQUILLETT, p. 24, J. N. York Ent. Soc. viii.
- Scriptotricha culta*; this name was previously applied in error to *Paracantha culta*, COCKERELL, p. 400, Ann. Nat. Hist. v.

- Sepsisoma* n. g., *Richardina*, for *S. flavescens* n. sp., New Jersey, JOHNSON, p. 327, Ent. News Philad. xi.
- Siphonella niveipennis*, *minutissima*, Bosnia, STROBL, p. 631, Wiss. Mitt. Bosnien vii, n. spp.
- Sphaerocera pusilla* var. *nigripes*, STROBL, p. 68, Wien. ent. Zeit. xix.
- Stenomicro* n. g. *Drosophilidæ*, for *S. angustata* n. sp., Puerto Rico, COQUILLETT, p. 262, P. U. S. Mus. xxii.
- Stenopterina unimaculata* Kert., referred to *Epicausta*, MIK, p. 71, Wien. ent. Zeit. xix.
- S. bicolor*, Florida, JOHNSON, p. 246, Canad. Ent. xxxii; *S. varia*, Florida, COQUILLETT, p. 25, J. N. York Ent. Soc. viii : n. spp.
- Stictomyia punctata*, New Mexico, COQUILLETT, p. 23, t. c. n. sp.
- Teichomyza fusca*, metamorphoses, larval structure, VOGLER (1360).
- Tephritis staminea*, p. 419, pl. xii, fig. 23, *subradiata*, fig. 24, *cancellata*, fig. 25, p. 420, *fibulata*, fig. 26, *obsoleta*, fig. 27, p. 421, *semifusca*, fig. 28, *intricata*, fig. 29, p. 422, Mexico, WULF, Biol. Centr.-Amer. Dipt. ii, n. spp.
- Tetanocera*, note on the origin of the name, OSTEN SACKEN (972); monograph of European *Tetanocera*, HENDEL, pp. 319-358, Verh. Ges. Wien I.
- Tetanops polita*, Colorado, COQUILLETT, p. 22, J. N. York Ent. Soc. viii, n. sp.
- Traginops* n. g. near *Milichia*, p. 429, for *T. irrorata* n. sp., Georgia, p. 430, COQUILLETT, Ent. News Philad. xi.
- Trypetidæ*, notes on some recent N. American synonymy of, DOANE, pp. 47, 48, J. N. York Ent. Soc. viii.
- Trypeta notata*, galls, COCKERELL, p. 198, J. N. York Ent. Soc. viii; *T. naryitia* Walk. = (*Tephronota humilis* Loew), COQUILLETT, p. 22, t. c.
- Trypetoptera* n. g. for *Tetanocera punctulata*, *formosa*, HENDEL, p. 352, Verh. Ges. Wien I.
- Urellia eugenia*, *vicina*, Mexico, WULF, p. 427, Biol. Centr.-Amer. Dipt. ii, n. spp.

## PUIPIPARA.

- Revision of the family *Streblidæ* with history, catalogue and bibliography, SPEISER (1261).
- A similar revision of *Nycteribiidæ*, id. (1262).
- Streblidæ* viviparous, id. (1263).
- Physiology of metamorphosis, sexual structures of female, development in uterus, *Melophagus ovinus*, BERLESE, pp. 118-146, Riv. Patol. Veg. viii.
- The imaginal discs of *Melophagus*, PRATT (1054).
- Archinycteribia* n. g. p. 30, for *A. actena* n. sp., New Pomerania on *Dobsonia peronii*, p. 31, pl. iii, figg. 6, 8, 12, SPEISER, Arch. Naturg. lxvii.
- Craterina* Olf. = (*Oxypterum* Leach), should be written *Craterhina*, SPEISER, p. 554, Ann. Mus. Genova xl.
- Cyclopodia*; table of species, SPEISER, Ent. Nachr. xxvi, pp. 289-293.
- C. minor*, New Pomerania, *inflatus*, New Guinea, p. 291, *macrura*, *similia*, New Pomerania, p. 292, SPEISER, t. c.; fuller descriptions, Arch. Naturg. lxvii, p. 51 etc. : n. spp.
- Hippobosca maculata*, synonymical note, SPEISER, p. 560, Ann. Mus. Genova xl.
- Lepopteryx* n. g. *Streblidæ* for *Lipoptena phyllostomatis* Perty, p. 53, and *L. megastigma* n. sp., on *Noctilio dorsatus*, p. 54, pl. iii, fig. 2, SPEISER, Arch. Naturg. lxvi.

- Megetopoda desiderata*, on *Phyllostoma* from Brazil and Cuba, SPEISER, p. 57, pl. iii, fig. 6, t. c.  
*Nycteribia* (*Acrocholidia*) *dispar*, Kaiser-Wilhelms-Land, p. 42, *stichotricha*, Nias Island, p. 44, *scissa*, S. Africa, on *Rhinolophus capensis*, p. 45, *N.* (*Listropodia*) *allotopa*, p. 47, *parvula*, p. 48, Sumatra, SPEISER, Arch. Naturg. lxvii, n. spp.  
*Nycteribosca* n. g. *Streblidae* for *N. gigantea* n. sp., Bismarck Arch., and *Raymondia kollari* Fr. etc., SPEISER, p. 46, op. cit. lxvi.  
*Olfersia macleayi* and other *Hippoboscidae* in Australia, FROGGATT (468).  
*O. exornata*, Sumatra, SPEISER, p. 562, Ann. Mus. Genova xl, n. sp.  
*Ornithoica*, validity, *O. beccarina*, characters, table of species, SPEISER, pp. 555–560, t. c.  
*O. unicolor*, Sumatra, SPEISER, p. 556, t. c. n. sp.  
*Paradyschiria* n. g. *Streblidae*, p. 55, for *P. fusca*, n. sp., Columbia, p. 56, pl. iii, fig. 1, SPEISER, Arch. Naturg. lxvi.  
*Penicillidia conspicua* n. n. for *westwoodii* Kol. nec Guér., SPEISER, p. 36, op. cit. lxvii.  
*P. pachymela*, Somaliland, p. 37, *euxesta* Burma on *Phyllorhina armigera*, p. 39, SPEISER, t. c. ; *P. monoceros*, Germany, SPEISER, p. 278, Illustr. Zeitschr. Ent. v ; full description, Arch. Naturg. lxvii, p. 35 : n. spp.  
*Raymondia pagodarum* n. n. for *huberi* Schin., p. 50, *lobulata* n. n. for *kollari* Schin., p. 51, SPEISER, Arch. Naturg. lxvi, n. spp.

### APHANIPTERA (SIPHONAPTERA).

[Cf. HESSE (585), HEYMONS (587), HUBER (618), N. C. ROTHSCILD (1134, 1135).]

The mouth-parts of *Pulex*, HEYMONS (587).

*Ceratophyllus gallinae*, p. 540, *columbae*, *hirundinis*, p. 542, recognised as distinct, characters, genitalia figured, ROTHSCILD, Nov. Zool. vii.

*C. styx* on Sand-Martin, ROTHSCILD, p. 543, pl. ix, t. c. n. sp.

*Hystriropsychylla talpae*, hosts, figure, N. C. ROTHSCILD, p. 257, pl. x, Ent. Rec. xii.

*Pulex avium* : more than one species under this name : (cf. *Ceratophyllus*), ROTHSCILD, Nov. Zool. vii.

*P. madagascariensis*, on *Centetes ecaudatus*, ROTHSCILD, p. 37, Ent. Rec. xii, n. sp.

*Sarcopsylla*, *Pulex*, clinical bibliography, HÜBER (618).

*S. penetrans*, spread in Africa, HESSE (585).

*Typhlopsylla tristis*, Victoria, p. 36, *ingens*, S. Africa, p. 37, ROTHSCILD, Ent. Rec. xii, n. spp.

(E.) *RHYNCHOTA* OR *HEMIPTERA*.

KIRKALDY (729) gives copious nomenclatorial notes which it is impossible for us to deal with in detail ; and in (730) gives additions and makes observations on Lethierry & Severin's Catalogue : and proposes new names for a number of genera of Homoptera. The new names are recorded by us, but other synonymy must be sought in the work itself.

Notes and corrections to Reed's work (not yet seen) on Chilian *Hemiptera*, BERG (102).

The stridulation of *Hemiptera*, historical and general account, HANDLIRSCH (554).

Stridulation ; the views of Swinton, Goureau, and others, HANDLIRSCH (555).

HEMIPTERA-HETEROPTERA.

[The following memoirs relate to *Hemiptera-Heteroptera*, viz :—BERG (97, 102), BREDDIN (172-176), CAUDELL (230), CHAMPION (235, 511), COCKERELL (279), DISTANT (322-329), HANDLIRSCH (554, 555, 560), HEIDEMANN (572), HORVÁTH (606, 607), HUEBER (622), JAKOWLEFF (656), KIRBY (725), KIRKALDY (727-733), KUHLGATZ (787), MARCHAL (855), MARTIN (863, 864), MEUNIER (904), MONTANDON (917, 918, 920), MONTGOMERY (921), PAULMIER (980), PAZLAVSZKY (981), PLATEAU (1044), REUTER (1105-1109), STROBL (1290).]

*Euctenodes*, discussed and referred to *Diptera*, SPEISER (1260).

PENTATOMIDÆ.

*Pentatomina*: DISTANT treats the synonymy of this family, especially, but not exclusively, as regards Walker's species, Ann. Nat. Hist. v, pp. 386 etc. The synonymy is not recorded in our pages. DISTANT gives a summary of it, pp. 430-435, t. c.

*Asopina* and *Tesseratomina* of Walker reviewed, DISTANT (323).

*Dinidorina*, *Phyllocephalina*, *Urolabidina*, and *Acanthosomina* of Walker revised, DISTANT (324).

Synonymy and taxonomy of the *Pentatomidæ* of the Hope collection at Oxford, DISTANT, pp. 807-824, P. Zool. Soc. London. Includes several pages of corrections of generic position.

*Accarana distanti*, New Guinea, BREDDIN, p. 19, Ent. Nachr. xxvi, n. sp.

*Acoloba malleata*, Delagoa Bay, DISTANT, p. 82, Ent. Mag. xxxvi, n. sp.

*Acrozangis* n. g. near *Zangis*, p. 310, for *A. semiprasina* n. sp., Sumatra, p. 311, BREDDIN, Ent. Zeit. Stettin lxi.

*Actuarius* n. g. for *Pentatoma albonotata* Westw., pl. lii, fig. 11, DISTANT, p. 814, P. Zool. Soc. London 1900.

- Egaleus bechuana*, Centr. Africa, KIRKALDY, p. 78, Entomologist xxxiii, n. sp., but cf. *Antestia variegata*.
- Elia atricornis* Westw., pl. liii, fig. 8, DISTANT, p. 818, P. Zool. Soc. London 1900; *Æ. melanota*, p. 229, *furcula* Fieb., p. 231, redescribed, REUTER, Ofv. Finska Forh. xlii.
- Æ. simillima*, Turkestan, REUTER, t. c., p. 233, n. sp.
- Æschrocoris nodiventris*, Sumatra, BREDDIN, p. 299, Ent. Zeit. Stettin lxi, n. sp.
- Æthys nitens*, Christmas Is., KIRBY, p. 127, pl. xv, fig. i, Monogr. Christmas Island, n. sp.
- Ætius* n. g. for *Atelocerus variegatus* Westw., pl. lii, fig. 8, DISTANT, p. 813, P. Zool. Soc. London 1900.
- Agerus metallicus*, Sumatra, BREDDIN, p. 303, Ent. Zeit. Stettin lxi, n. sp.
- Amyntor pallidus*, Sumatra, BREDDIN, p. 328, t. c. n. sp.
- Anasida funebris*, Natal, DISTANT, p. 59, Ann. Nat. Hist. vi, n. sp.
- Anaxandra bovilla*, Assam, DISTANT, p. 229, t. c. n. sp.
- Antestia variegata* Thunb. (as *Cimex*) = (*Egaleus bechuana* Kirk.), *Pent. lineaticollis* Stål is a var., DISTANT, p. 174, Tr. ent. Soc. London 1900.
- A. ellenriedi*, Sumatra, BREDDIN, p. 322, Ent. Zeit. Stettin lxi, n. sp.
- Avicenna* n. g. for *Rhynchocoris inguinata* Westw., pl. liii, fig. 1, DISTANT, p. 815, P. Zool. Soc. London 1900.
- Araducta* Wlk. recharacterised, DISTANT, p. 426, Ann. Nat. Hist. v.
- A. bella*, Ceylon, p. 427, *malayana*, Pulo Perang, p. 428, DISTANT, t. c. n. spp.
- Asopus pyrophilus*, characters, BREDDIN, p. 146, Abh. Senckenb. Ges. xxv, n. sp.
- Aspideurus ornatus*, Java, BREDDIN, p. 161, Deutsche ent. Zeitschr. 1900; *A. politus*, Sumatra, BREDDIN, p. 318, Ent. Zeit. Stettin lxi; *A. flavescens*, Rockhampton, BREDDIN, p. 24, Ent. Nachr. xxvi : n. spp.
- Aspongopus nepalensis*, used as food, WATERHOUSE, p. ix, P. ent. Soc. London 1900.
- A. binotatus*, p. 221, *figlinus*, E. Africa, *singhalanus*, Ceylon, p. 222, DISTANT, Ann. Nat. Hist. vi, n. sp.
- Auletrissa* n. n. for *Auletris* Br. 1899, BREDDIN, p. 185, Deutsche ent. Zeitschr. 1900.
- Basicroptus irroratus*, pl. liii, fig. 6, DISTANT, p. 817, P. Zool. Soc. London 1900.
- B. diversus*, W. Australia, p. 223, *negus*, Arabia and Abyssinia, p. 224, DISTANT, Ann. Nat. Hist. vi, n. spp.
- Biprorulus* n. g. near *Rhynchocoris*, p. 30, for *B. bibax* n. sp., N. S. Wales, p. 31, BREDDIN, Ent. Nachr. xxvi.
- Brachyaulax kukenthali*, Halmahera, BREDDIN, p. 140, Abh. Senckenb. Ges. xxv, n. sp.
- Brachycoris insignis*, Ceylon, DISTANT, p. 420, Ann. Nat. Hist. v, n. sp.
- Brochymena cuspidata*, Costa Rica, DISTANT, p. 689, Tr. ent. Soc. London 1900, n. sp.
- Brachynema ruficorne*, Turkestan, REUTER, p. 235, Ofv. Finska Forh. xlii; *B. venustum*, Oran, MONTANDON, p. 158, Bull. Soc. Bucarest ix : n. spp.
- Brachyplatys biroi*, New Guinea, MONTANDON, p. 414, Termes. Fuzetek xxiii, n. sp.
- Byrsinocoris* n. g. near *Peribyssus*, p. 156, for *B. nigroscutellatus* n. sp., Biskra, p. 157, MONTANDON, Bull. Soc. Bucarest ix.
- Byrsodepsus sundanus*, Sumatra, BREDDIN, p. 334, Ent. Zeit. Stettin lxi, n. sp.
- Cantao rudis* Voll., characters, BREDDIN, p. 139, Abh. Senckenb. Ges. xxv, n. sp.
- Carbula trabifera*, Sumatra, BREDDIN, p. 302, Ent. Zeit. Stettin lxi, n. sp.

- Caura polluta*, Angola, DISTANT, p. 168, Tr. ent. Soc. London 1900, n. sp.
- Chiasosternum* Karsch = (*Asolenidium* Br.), BREDDIN, p. 185, Deutsche ent. Zeitschr. 1900.
- Chlorochroa rubromarginata* (Reut. as *Pentaloma*) redescribed, REUTER, p. 234, Ofv. Finska Forh. xlii.
- Coleotichus sumatranus*, Sockaranda, BREDDIN, p. 276, Ent. Zeit. Stettin lxi, n. sp.
- Coptosoma accensitum, paradoxum*, characters as distinct from *pygmaeum*, MONTANDON, pp. 535, 536, Ann. Mus. Genova xl; *C. respersum* ♂, p. 418, *C. insulanum* var. n. *detectum*, p. 419, MONTANDON, Termes. Fuzetek xxiii.
- C. bullatum*, p. 416, *annulipes*, p. 417, Madagascar, *stabilitum*, New Guinea, p. 419, MONTANDON, t. c.; *C. centronotatum*, p. 531, *dissolutum*, p. 533, *impicticolle*, p. 537, Sumatra, MONTANDON, Ann. Mus. Genova xl : n. spp.
- Cresphontes monsoni*, pl. lii, fig. 6, DISTANT, p. 814, P. Zool. Soc. London 1900.
- C. rufescens*, Java, BREDDIN, p. 163, Deutsche ent. Zeitschr. 1900, n. sp.
- Cuspicona recurvicornis*, p. 28, *forticornis*, p. 29, N. S. Wales, BREDDIN, Ent. Nachr. xxvi, n. spp.
- Cyclopelta parva*, China, DISTANT, p. 220, Ann. Nat. Hist. vi, n. sp.
- Cydnus sahlbergi*, Corfu, REUTER, p. 222, Ofv. Finska Forh. xlii, n. sp.
- Dalpada trimaculata* ♀, BREDDIN, p. 142, Abh. Senckenb. Ges. xxv.
- Dictyotus pallipes*, pl. lii, fig. 9, DISTANT, p. 810, P. Zool. Soc. London 1900.
- Dinidor dispar* Westw. referred to *Hyrmine*, description, BREDDIN, p. 23, Ent. Nachr. xxvi.
- Diploxiphus* subg. n., cf. *Lyramorpha*.
- Dismegistus funebris*, Kilimanjaro, DISTANT, p. 169, pl. ii, fig. 8, Tr. ent. Soc. London 1900, n. sp.
- Dorpius* n. g. *Pentatominae*, p. 164, for *D. typicus*, pl. ii, fig. 3, Congo, *indicus*, Punjab, fig. 4, n. spp., p. 165, DISTANT, t. c.
- Ectinopus opacus*, Costa Rica, DISTANT, p. 688, t. c. n. sp.
- Elaphoezygum* n. g. near *Plataspis*, p. 120, for *E. goetzei* n. sp., E. Africa, p. 125, KÜHLGATZ, SB. Ges. naturf. Berlin 1900.
- Elasmotethus nebulosus, nilgirensis*, p. 231, *lewisi*, p. 232, E. India, DISTANT, Ann. Nat. Hist. vi, n. sp.
- Embolosterna olivacea*, Borneo, HORVÁTH, p. 366, Termes. Fuzetek xxiii, n. sp.
- Emphylocoris* n. g. near *Paucasta*, p. 217, for *E. testaceus* n. sp., Turkestan, p. 218, REUTER, Ofv. Finska Forh. xlii.
- Eurinome lata*, Ternate, BREDDIN, p. 142, Abh. Senckenb. Ges. xxv, n. sp.
- Eurydema lineola* (Bär. as *Strachia*), redescribed, p. 236, *E. rugulosa* var. n. *nigrorubra*, p. 237, REUTER, Ofv. Finska Forh. xlii.
- Eurygaster integriceps*, varieties, REUTER, p. 219, t. c.
- Eusarcoris egenus*, China, JAKOWLEFF, p. 522, Horæ Soc. ent. Ross. xxxiv; *E. capreolus*, Sumatra, BREDDIN, p. 301, Ent. Zeit. Stettin lxi : n. spp.
- Eusthenes thoracicus*, Assam, DISTANT, p. 61, Ann. Nat. Hist. vi, n. sp.
- Fernelius* n. g. *Pentatominae*, for *F. indicus* n. sp., Burma etc., DISTANT, p. 173, Tr. ent. Soc. London 1900.
- Frisimelica* n. g. near *Megarhynchus*, p. 225, for *Cimex signatus* Fab., DISTANT, Ann. Nat. Hist. vi.
- Geotomus laticollis*, Tunis, REUTER, p. 223, Ofv. Finska Forh. xlii, n. sp.
- Glypsus sparsus*, pl. liii, fig. 5, DISTANT, p. 817, P. Zool. Soc. London 1900.
- Gonopsis bantu*, E. Africa, DISTANT, p. 224, Ann. Nat. Hist. vi, n. sp.
- Gordonerius* n. g. for *Oplonus lineatus* Walk., DISTANT, p. 86, t. c.



- Halyabbas* n. g. *Pentatominae*, for *H. unicolor* n. sp., Lombok, p. 164, pl. ii, fig. 2, DISTANT, Tr. ent. Soc. London 1900.
- Halyomorpha ornativentris*, Sumatra, BREDDIN, p. 296, Ent. Zeit. Stettin lxi; *H. longiceps*, Ternate, BREDDIN, p. 143, pl. ix, fig. 3, Abh. Senckenb. Ges. xxv : n. spp.
- Hoplistodera recurva*, India, DISTANT, p. 170, pl. ii, fig. 9, Tr. ent. Soc. London 1900, n. sp.
- Hyllus fasciatus*, Ceylon, DISTANT, p. 394, Ann. Nat. Hist. v, n. sp.
- Hyrmine minor*, Sumatra, BREDDIN, p. 306, Ent. Zeit. Stettin lxi, n. sp.
- Ilerda pallescens*, pl. lii, fig. 10, DISTANT, p. 812, P. Zool. Soc. London.
- I. sudana*, Africa, DISTANT, p. 82, Ent. Mag. xxxvi, n. sp.
- Ilipla natalicola*, Natal, DISTANT, p. 82, t. c. n. sp.
- Irochrotus caspius, caucasicus*, p. 209, *lanatus*, p. 210, *incisus* Stål (as *Arctocoris*), p. 211, redescribed, REUTER, Ofv. Finska Forh. xlii.
- I. excisus*, Algeria, REUTER, p. 211, t. c. n. sp.
- Jalla subdilata*, Algeria, REUTER, p. 238, t. c. n. sp.
- Kalula* n. g. for *Elia varicornis* Westw., pl. lii, fig. 4, DISTANT, p. 809, P. Zool. Soc. London 1900.
- Lathraedæus* n. g. near *Cresphontes*, p. 25, for *L. speculator* n. sp., New Guinea, p. 26, BREDDIN, Ent. Nachr. xxvi.
- Leovitus* n. g. for *Rhaphigaster macracanthus* Dall., DISTANT, p. 425, Ann. Nat. Hist. v.
- Lincus discessus*, Costa Rica, DISTANT, p. 688, Tr. ent. Soc. London 1900, n. sp.
- Lyramorpha* revised with subg. n. *Lyrodes*, p. 345, for most of the species, and *Diploxiphus*, p. 352, subg. n. for *L. maculifera* Tryon, HORVÁTH, pp. 341-353, Termes. Fuzetek xxiii; *L. picta, vollenhovi*, distinguished, DISTANT, p. 379, Ann. Nat. Hist. vi.
- L.* (*Lyrodes* subg. n.), *impar, persimilis*, p. 346, *breddini*, p. 347, New Guinea, HORVÁTH, Termes. Fuzetek xxiii; *L. basalis*, New Guinea, HORVÁTH, p. 633, Semon Forschungsreisen v; *L. soror*, p. 36, New Guinea, *parens*, p. 37, Queensland, BREDDIN, Ent. Nachr. xvi : n. spp.
- Lyrodes* subg. n., cf. *Lyramorpha*.
- Malgassus* n. g. near *Sepina*, p. 367, for *M. hypoleucus* n. sp., Madagascar, p. 368, HORVÁTH, Termes. Fuzetek xxiii.
- Madegaschia punctata*, Madagascar, MONTANDON, p. 415, t. c. n. sp.
- Melampodius* n. g. for *Atelocerus cervicornis* Westw., pl. liii, fig. 10, DISTANT, p. 817, P. Zool. Soc. London 1900.
- Menaccarus ciliatus* Stål, p. 225, *arenicola* (Scholtz), p. 226, *dohrnianus* (Muls. Rey), p. 227, *divaricatus* Jak., p. 228, redescribed, REUTER, Ofv. Finska Forh. xlii.
- M. deserticola*, Astrakhan, *transparens*, Transcaspian, JAKOWLEFF, p. 518, Horv. Soc. ent. Ross. xxxiv, n. spp.
- Meneotheus semoni*, Australia, HORVÁTH, p. 631, Semon Forschungsreisen v, n. sp.
- Menida atkinsoni*, India, DISTANT, p. 171, pl. ii, fig. 10, Tr. ent. Soc. London 1900; *M. labecula*, Ceylon, DISTANT, p. 396, Ann. Nat. Hist. v : n. spp.
- Microdeuterus dohrni*, Sumatra, BREDDIN, p. 335, Ent. Zeit. Stettin lxi, n. sp.
- Mormidea scutellata*, pl. lii, fig. 7, DISTANT, p. 811, P. Zool. Soc. London 1900.
- Neodius ellenriederi*, p. 292, *dohrni*, p. 294, *schultheissi*, p. 295, Sumatra, BREDDIN, Ent. Zeit. Stettin lxi, n. spp.
- Nessula* n. g. near *Zangia*, p. 313, for *N. sponsa* n. sp., Sumatra, p. 315, BREDDIN, t. c.
- Nezara viridula*, varr. and synonymy, HORVÁTH, p. 632, Semon Forschungsreisen v.

- N. sahlbergi*, Amu Daria, REUTER, p. 236, Ofv. Finska Forh. xlii; *N. æthiops*, Tanganika, DISTANT, p. 170, Tr. ent. Soc. London 1900 : n. spp.
- Ochrophara montana*, India, DISTANT, p. 165, t. c. n. sp.
- Ocirrhoë roei*, pl. lii, fig. 12, *virescens*, pl. liii, fig. 7, DISTANT, p. 815, P. Zool. Soc. London 1900.
- O. lutescens*, K. George Sound, DISTANT, p. 422, Ann. Nat. Hist. v, n. sp.
- Oncomeris vicinus*, New Britain, HORVÁTH, p. 358, Termes. Fuzetek xxiii, n. sp.
- Opatrocynus* n. g. near *Brachypelta*, for *O. cryptocephalus* n. sp., Sumatra, BREDDIN, p. 289, Ent. Zeit. Stettin lxi.
- Orsilochus bajulans*, Costa Rica, DISTANT, p. 687, Tr. ent. Soc. London 1900, n. sp.
- Orthoschizops assimilis*, fig. 2, *rugosus*, fig. 3, DISTANT, p. 809, P. Zool. Soc. London 1900.
- Otantestia* n. g. near *Antestia*, p. 324, for *P. pulchra* Dall, and *A. modificata* Dist., BREDDIN, Ent. Zeit. Stettin lxi.
- Pachycoris*, stridulating organs, HANDLIRSCH, pp. 131-134, Ann. Hofmus. Wien xv.
- Paramenestheus* n. g. near *Menestheus*, p. 20, for *P. terricolor* n. sp., N. S. Wales, p. 21, BREDDIN, Ent. Nachr. xxvi.
- Paranotius* n. g. near *Notius*, p. 17, for *P. punctatissimus* n. sp., N. S. Wales, p. 18, BREDDIN, t. c.
- Palomena unicolor*, pl. lii, fig. 5, DISTANT, p. 811, P. Zool. Soc. London 1900.
- Parodius* n. g. *Pentatominae*, p. 166, for *P. typicus*, Philippines, *mouhoti*, Cambodia, pl. ii, fig. 6, p. 167, n. spp., DISTANT, Tr. ent. Soc. London 1900.
- Pentatoma punctaria* Stål, referred to *Ænopia*, and = (*Sciocoris odiosus* Butl.), DISTANT, p. 174, t. c.; *P. harrisi* Westw., pl. liii, fig. 2, *lateralis*, fig. 9, DISTANT, p. 818, P. Zool. Soc. London 1900; *P. inclusa* Dohrn, redescribed as *Peribalus inclusus*, REUTER, p. 233, Ofv. Finska Forh. xlii.
- P. grossepunctatum*, Christmas Is., KIRBY, p. 128, pl. xv, fig. 2, Monogr. Christmas Island, n. sp.
- Pisena* n. g. near *Sepina*, p. 372, for *P. longirostris* n. sp., Madagascar, p. 373, HORVÁTH, Termes. Fuzetek xxiii.
- Platynopus parvus*, p. 66, *scutellatus*, p. 67, W. Africa, DISTANT, Ann. Nat. Hist. vi; *P. borneensis*, Borneo, DISTANT, p. 696, Tr. ent. Soc. London 1900 : n. spp.
- Platysolen obscurus* Sahlb. is var. of *Neottiglossa pusilla* Gmel., REUTER, p. 233, Ofv. Finska Forh. xlii.
- Plautia splendens*, Japan, DISTANT, p. 171, Tr. ent. Soc. London 1900, n. sp.
- Plexippus affinis*, India, DISTANT, p. 387, Ann. Nat. Hist. v, n. sp.
- Plisthenes ventralis*, *dilatatus*, characters queried, DISTANT, p. 380, Ann. Nat. Hist. vi.
- P. confusus*, p. 361, *moluccanus*, Moluccas, *australis*, Australia, p. 362, *ventralis*, New Guinea, p. 364, HORVÁTH, Termes. Fuzetek xxiii, n. sp.
- Podius neglectus*, pl. liii, fig. 4, DISTANT, p. 817, P. Zool. Soc. London 1900.
- Podops latiuscula*, *sororcula*, p. 282, *inermiceps*, p. 284, Sumatra, BREDDIN, Ent. Zeit. Stettin lxi, n. spp.
- Prionocompastes* n. g. near *Compastes*, p. 165, for *P. salebrosus* n. sp., Java p. 166, BREDDIN, Deutsche ent. Zeitschr. 1900.
- Psacusta lethierryi* Put. referred to *Periphima* and redescribed, REUTER p. 216, Ofv. Finska Forh. xlii.
- P. affinis*, Sarepta, REUTER, p. 214, t. c. n. sp.

- Pudacus bovillus*, Costa Rica, DISTANT, p. 689, Tr. ent. Soc. London 1900, n. sp.
- Pygoplatys montanus*, Borneo, DISTANT, p. 696, t. c. n. sp.
- Rhynchocoris alatus*, India, DISTANT, p. 172, pl. ii. fig. 12, t. c.; *R. margininotatus*, Sumatra, BREDDIN, p. 325, Ent. Zeit. Stettin lxi : n. spp.
- Rhynchotmetus* n. g. near *Sepina*, p. 368, for *R. typicus* n. sp., Madagascar, p. 369, HORVÁTH, Termes. Fuzetek xxiii.
- Sabæus kukenthali*, Celebes, BREDDIN, p. 145, pl. ix, fig. 4, Abh. Senckenb. Ges. xxv, n. sp.
- Saccesurus* n. g. near *Aspideurus*, p. 320, for *S. bicolor* n. sp., Sumatra, p. 321, BREDDIN, Ent. Zeit. Stettin lxi.
- Sustragala murreeana*, *edessoides*, p. 228, *hampsoni*, p. 229, E. India, DISTANT, Ann. Nat. Hist. vi, n. spp.
- Scaptocoris castaneus* Perty, note on, DISTANT, p. 688, Tr. ent. Soc. London 1900.
- S. talpa*, Guatemala, CHAMPION, p. 256, Ent. Mag. xxxvi, n. sp.
- Scoparipes minor*, Sumatra, BREDDIN, p. 287, Ent. Zeit. Stettin lxi, n. sp.
- Sehirus horvathi*, Tunis, REUTER, p. 221, Ofv. Finska Forh. xlii, n. sp.
- Sepina flaviceps*, p. 370, *gularis*, p. 371, Madagascar, HORVÁTH, Termes. Fuzetek xxiii, n. spp.
- Severiniella*, *Heterocrates* and allies, table, KUHLGATZ, pp. 131–137, SB. Ges. naturf. Berlin 1900.
- Solenostethium lynceum* (Fabr. as *Cimex*) *ledereri* (Fieb. as *Cæloglossa*), redescribed, REUTER, pp. 212, 213, Ofv. Finska Forh. xlii.
- Sphaerocoris unicolor* Dall. (= *Chionosternum mutabile* Karsch), BREDDIN, p. 185, Deutsche ent. Zeitschr. 1900.
- Spudeus parvulus*, pl. lii, fig. 1, DISTANT, p. 809, P. Zool. Soc. London 1900.
- Stenozygum erythraspis* var., BREDDIN, p. 22, Ent. Nachr. xxvi.
- S. miniatulum*, Australia, DISTANT, p. 169, pl. ii, fig. 7, Tr. ent. Soc. London 1900, n. sp.
- Stibaropus subglaber*, Sumatra, BREDDIN, p. 286, Ent. Zeit. Stettin lxi, n. sp.
- Stictocarenum suffusus*, King Is., DISTANT, p. 230, Ann. Nat. Hist. vi, n. sp.
- Stronachlachar* n. n. for *Aleria* Stål nec Marsh., KIRKALDY, p. 242, Entomologist xxxiii.
- Tamolia* n. g. near *Plisthenes*, for *Lyramorphus ramifera* Walk., HORVÁTH, p. 365, Termes. Fuzetek xxiii.
- T. horvathi* n. n. for *T. ramifera* Horv. nec Walk., DISTANT, Ann. Nat. Hist. vi, p. 379, n. sp.
- Tarisa setulosa*, Biskra, MONTANDON, p. 156, Bull. Soc. Bucarest ix, n. sp.
- Tesseratomina*; genera tabulated, HORVÁTH, pp. 339, 340, Termes. Fuzetek xxiii.
- Tholagmus nigricornis*, Turkestan, REUTER, p. 220, Ofv. Finska Forh. xlii, n. sp.
- Tolumnia immaculata*, India and Ceylon, DISTANT, p. 168, Tr. ent. Soc. London 1900, n. sp.
- Trincavellius* n. g. *Discocephalineæ* for *Sciocoris galapagoensis* Butl., figured, pl. ii, fig. 1, DISTANT, t. c. p. 163.
- Tropicorypha signata*, S. Africa, DISTANT, p. 168, t. c. n. sp.
- Urochela distincta*, China, DISTANT, p. 226, Ann. Nat. Hist. vi, n. sp.
- Utana* n. g. for *Caspiconia suprema* Walk., DISTANT, p. 423, Ann. Nat. Hist. v.
- Vitellus orientalis*, India, DISTANT, p. 172, pl. ii, fig. 11, Tr. ent. Soc. London 1900; *V. antennæ*, Queensland, BREDDIN, p. 33, Ent. Nachr. xxvi : n. spp.
- Zangis ludekingi* variation, BREDDIN, p. 161, Deutsche ent. Zeitschr. 1900.

## COREIDÆ.

In Rhynchotal notes vii (325), DISTANT revises Walker's work in this family.

*Acanthocolpura brunnea*, N. S. Wales, BREDDIN, p. 40, Ent. Nachr. xvi, n. sp.

*Agraphopus suturalis*, Turcomania, *virescens*, Turkestan, REUTER, p. 278, Ofv. Finska Forh. xlii, n. spp.

*Anasa perfusa*, Costa Rica, DISTANT, p. 691, Tr. ent. Soc. London 1900, n. sp.

*Anoplocnemis signata*, p. 373, *whytei*, p. 374, E. Africa, DISTANT, Ann. Nat. Hist. vi, n. spp.

*Brachylybas marmoratus*, Halmahera, BREDDIN, p. 150, pl. ix, fig. 8, Abh. Senckenb. Ges. xxv, n. sp.

*Chorosoma schillingi*, *macilentum*, redescribed, REUTER, p. 280, Ofv. Finska Forh. xlii.

*Chorosoma longicolle*, Turcomania, REUTER, p. 279, t. c. n. sp.

*Colpura speculatrix*, Borneo, p. 152, pl. ix, fig. 6, *planiceps*, Celebes, fig. 7, p. 153, BREDDIN, Abh. Senckenb. Ges. xxv; *C. luteifusula*, p. 204, Sumatra, *nigrifusula*, p. 206, *scrutatrix*, p. 207, Borneo, *imbellis*, Malacca, p. 209, *inermicollis*, Borneo, *tuberculicollis*, p. 210, *angulicollis*, *armillata*, p. 211, *stenocephala*, p. 212, *stenocephaloides*, p. 213, Malacca, *schultheissi*, Sumatra, p. 214, BREDDIN, Rev. Ent. franc. xix; *C. sortita*, New Guinea, HORVÁTH, p. 635, Semon Forschungsreisen v: n. spp.

*Coreus bos* var. n. *erecticornis*, REUTER, p. 268, Ofv. Finska Forh. xlii.

*Coriomoris* Westw. = (*Dasycoris* Dall. = *Merocoris* Hahn), p. 270, var. n. pp. 273-275, REUTER, Ofv. Finska Forh. xlii.

*C. viticollis*, Caucasus, p. 270, *pallidus*, Transcaspien, p. 270, *spinola* (Costa), p. 274, S. Europe, REUTER, t. c. n. spp.

*Corizus hyoscyami* var. n. *limbatus*, REUTER, p. 275, Ofv. Finska Forh. xlii.

*Dalader horsfieldi*, Java, DISTANT, p. 376, Ann. Nat. Hist. vi; *D. shelfordi*, Borneo, DISTANT, p. 697, Tr. ent. Soc. London 1900: n. spp.

*Elasmopoda affinis*, E. Africa, DISTANT, p. 368, Ann. Nat. Hist. vi, n. sp.

*Evagrius* n. g. near *Holopterna*, for *E. gladius* n. sp., E. Africa, DISTANT, p. 369, t. c.

*Holopterna ellioti*, E. Africa, DISTANT, p. 368, t. c. n. sp.

*Homalocolpura* n. g., p. 155, for *H. bibax* n. sp., Celebes, p. 156, pl. ix, fig. 10; *H. edax* n. sp., Java, added, p. 201, BREDDIN, Abh. Senckenb. Ges. xxv.

*Homocercus ornativentris*, Borneo, BREDDIN, p. 149, pl. ix, fig. 5, t. c. n. sp.

*Liorhyssus hyalinus* var. n. *rubricatus*, REUTER, p. 276, Ofv. Finska Forh. xlii.

*Lybostes* n. n. for *Lybas* Dall. nec Chev., KIRKALDY, p. 240, Entomologist xxxiii.

*Lygeopharus ocellatus*, Halmahera, BREDDIN, p. 154, pl. ix, fig. 9, Abh. Senckenb. Ges. xxv, n. sp.

*Muccevetus persicus*, characters, *M. lineola* var. n. *ruficornis*, REUTER, p. 277, Ofv. Finska Forh. xlii.

*Melucha biolleyi*, Costa Rica, DISTANT, p. 374, Ann. Nat. Hist. vi, n. sp.

*Menardus* n. g. for *Meropachys notatus* Walk., DISTANT, p. 366, t. c.

*Microtelocerus* n. g., p. 268, near *Ceraleptus*, for *M. testaceus* n. sp., Turkestan, p. 269, REUTER, Ofv. Finska Forh. xlii.

*Mictis limbaticentris*, *farinulenta*, males, DISTANT, p. 371, Ann. Nat. Hist. vi; *M. valgus* var. *rufipes*, CANNAVIELLO, p. 305, Bull. Soc. ent. xxxii.

- M. oceanensis*, New Hebrides, DISTANT, p. 372, Ann. Nat. Hist. vi, n. sp.  
*Mozena alata*, Costa Rica, DISTANT, p. 375, t. c. n. sp.  
*Notobitus papuensis*, New Guinea, HORVÁTH, p. 635, Semon Forschungsreisen v, n. sp.  
*Ochrochira lunata*, China, DISTANT, p. 370, Ann. Nat. Hist. vi, n. sp.  
*Pachycephalini*; genera tabulated, BREDDIN, pp. 194, 195, Rev. Ent. franc. xix.  
*Pachycolpura* n. g. for *P. manca* n. sp., N. S. Wales, BREDDIN, p. 39, Ent. Nachr. xxvi.  
*Paryphes perpictus*, Costa Rica, DISTANT, p. 692, Tr. ent. Soc. London 1900, n. sp.  
*Pendulinus homœoceroideus*, Perak, BREDDIN, p. 169, Deutsche ent. Zeitschr. 1900; *P. cardinalis*, Celebes, BREDDIN, p. 157, Abh. Senckenb. Ges. xxv : n. spp.  
*Prionolomia gigas* ♀, BREDDIN, p. 169, Deutsche ent. Zeitschr. 1900.  
*P. mandarina*, China, DISTANT, p. 367, Ann. Nat. Hist. vi, n. sp.  
*Pternistria macromera* male dimorphism, BREDDIN, p. 167, Deutsche ent. Zeitschr. 1900.  
*Riptortus serripes* Fabr., from Thursday Island, description, HORVÁTH, p. 637, Semon Forschungsreisen v; *R. eugeniae*, characters, BREDDIN, p. 158, Abh. Senckenb. Ges. xxv.  
*Sciophyrus sulcicrus*, p. 198, *horvathi*, p. 199, New Guinea, BREDDIN, Rev. Ent. franc. xix; *S. diminutus*, Thursday Island, HORVÁTH, p. 635, Semon Forschungsreisen v : n. spp.  
*Stictopleurus angustus*, Turkestan, REUTER, p. 276, Ofv. Finska Forh. xlii, n. sp.  
*Strobilotoma typhæcornis* var. n. *divergens*, REUTER, p. 270, t. c.  
*Tachycolpura* n. g. for *Lybas penicillatus* Walk., BREDDIN, p. 215, Rev. Ent. franc. xix.  
*Tongorma* n. n. for *Craspedum*, Am. nec Ramb., KIRKALDY, p. 242, Entomologist xxxiii.  
*Typhlocolpura* n. g. for *S. decoratula* n. sp., Celebes, BREDDIN, p. 195, Rev. Ent. franc. xix.  
*Xanthocolpura* n. g. for *X. venosa* n. sp., Borneo, BREDDIN, p. 196, t. c.

## LYGÆIDÆ.

- Astacops major*, Halmahera, BREDDIN, p. 159, Abh. Senckenb. Ges. xxv; *A. (Scopiastes) laticeps*, N. S. Wales, BREDDIN, p. 170, Deutsche ent. Zeitschr. 1900 : n. spp.  
*Geocoris cardinalis* Put. described, REUTER, p. 244, Ofv. Finska Forh. xlii.  
*Ischnodemus venosus*, New Guinea, BREDDIN, p. 41, Ent. Nachr. xxvi, n. sp.  
*Leptodemus* n. g. for *Macropterna minuta* Jak., varieties, REUTER, pp. 244, 245, Ofv. Finska Forh. xlii.  
*Lygæus subrufescens*, pl. xv, fig. 3, p. 128, KIRBY, Monogr. Christmas Island; *L. (Melanocoryphus) sefrensis*, Algeria, REUTER, p. 243, Ofv. Finska Forh. xlii : n. spp.  
*Microcænocoris* n. g. near *Cænocoris*, for *M. nanus* n. sp., Sumbawa, BREDDIN, p. 171, Deutsche ent. Zeitschr. 1900.  
*Pachygrontha vidua*, New Guinea, HORVÁTH, p. 638, Semon Forschungsreisen v, n. sp.  
*Phoronastes* n. n. for *Phoroneus* Stål nec Raf., KIRKALDY, p. 242, Entomologist xxxiii.

## PYRRHOCORIDÆ.

- Antilochus coquebertii*, predaceous habits, KIRKALDY, p. 295, Entomologist xxxiii; *A. histrionicus*, characters, BREDDIN, p. 161, Abh. Senckenb. Ges. xxv.

- A. maximus*, Sumatra, BREDDIN, p. 172, Deutsche ent. Zeitschr. 1900, n. sp.  
*Dindymus decolor*, N. Guinea, BREDDIN, p. 173, t. c., n. sp.  
*Megadysercus* subg. n. of *Dysdercus*, for *D. mesiostigma* Dist., BREDDIN, p. 162, Abh. Senckenb. Ges. xxv.  
*Myrmoplasta potteri*, Abyssinia, MARTIN, p. 20, Bull. Mus. Paris 1900, n. sp.  
*Theraneis oleosa*, Costa Rica, DISTANT, p. 692, Tr. ent. Soc. London 1900, n. sp.

## PHYMATIDÆ.

- Macrocephalus arizonicus*, Tucson, COCKERELL, p. 66, Entomologist xxxiii, n. sp., but t. c. p. 201 said to be *uhleri* Handl.  
*Phymata salicis*, Arizona, COCKERELL, p. 66, Entomologist xxxiii, n. sp.

## BERYTIDÆ, TINGITIDÆ, ARADIDÆ.

- Alcletha* n. n. for *Dictyonota* L. & S., KIRKALDY, p. 241, Entomologist xxxiii.  
*Berytinus* n. n. for *Berytus* L. & S., KIRKALDY, p. 241, Entomologist xxxiii.  
*Brachyrhynchus lignicolus*, Christmas Is., KIRBY, p. 129, pl. xv, fig. 4, Monogr. Christmas Island, n. sp.

## HYDROMETRIDÆ.

- Gerris femorata*, p. 163, *pulchra, ciliata*, p. 164, characters, BREDDIN, Abh. Senckenb. Ges. xxv.  
*G. severini*, Congo, KIRKALDY, p. 432, Ann. Soc. ent. Belgique xlv;  
*G. kampaspe, darthula*, New Guinea, KIRKALDY, p. 806, Ann. Mus. Genova xl : n. spp.  
*Halobates*, 500 miles from land, WALKER, p. 115, Ent. Mag. xxxvi.  
*Hydrometra lineata* Say (omitted from L. & S. catalogue) characters, habits, egg, MARTIN, pp. 70-76, cuts, Canad. Ent. xxxii; *H. martini* n. n. for *lineata* Say nec Esch., KIRKALDY, p. 176, Entomologist xxxiii.  
*H. papuana*, New Guinea, KIRKALDY, p. 807, Ann. Mus. Genova xl, n. sp.  
*Mesovelia orientalis*, Sumatra, KIRKALDY, p. 808, t. c. n. sp.  
*Microvelia waelbroeckii, briseis*, Congo, KIRKALDY, p. 433, Ann. Soc. ent. Belgique xlv; *M. gestroi*, p. 806, *loriae*, p. 807, New Guinea, KIRKALDY, Ann. Mus. Genova xl : n. spp.  
*Rhagovelia peggiae*, New Guinea, KIRKALDY, p. 806, Ann. Mus. Genova xl;  
*R. tayloriella*, Jamaica, KIRKALDY, p. 72, Entomologist xxxiii, n. sp.  
*Trochopus plumbeus* Uhl. = (*marinus* Carp.), KIRKALDY, pp. 70-72, Entomologist xxxiii.

## REDUVIIDÆ (incl. EMESIDÆ NABIDÆ).

- N. American "Kissing bugs," HOWARD (616).  
*Amulius armillatus*, Borneo, BREDDIN, p. 168, Abh. Senckenb. Ges. xxv, n. sp.  
*Arcenius longiceps* var. BREDDIN, p. 171, t. c. n. sp.  
*Archilestidium* n. g. *Acanthaspidini*, p. 176, for *A. ornatulum* n. sp. N. S. Wales, p. 176, BREDDIN, Deutsche ent. Zeitschr. 1900.  
*Canthasancus pirata*, Celebes, BREDDIN, p. 176, t. c., n. sp.  
*Carthasis* n. g. near *Nabis*, p. 305, for *C. rubra* n. sp., Panama, pl. xix, fig. 4, CHAMPION, Biol. f. ii.

- Castra* n. n. for *Cimbus* Burm. nec Lap., KIRKALDY, p. 242, Entomologist xxxiii.
- Coranus subapterus*, stridulating-organs, HANDLIERSCH, p. 129, cuts, Ann. Hofmus. Wien xv.
- Crocianus* n. n. for *Crocias* 1899, BREDDIN, p. 185, Deutsche ent. Zeitschr. 1900.
- Daraza ambrosetti*, Buenos Aires, BERG, p. 188, Comun. Mus. Buenos Aires i, n. sp.
- Diplacodus* n. n. for *Diplodus* Am. nec. Raf., KIRKALDY, p. 242, Entomologist xxxiii.
- Ectinoderus ruppelli*, Halmahera, BREDDIN, p. 168, Abh. Senckenb. Ges. xxv, n. sp.
- Epidaurus compressispinus*, Borneo, BREDDIN, p. 172, t. c., n. sp.
- Epirodera vestita*, Java, HORVÁTH, p. 639, Semon Forschungsreisen v, n. sp.
- Ghilianella argentina*, Buenos Aires, BERG, p. 189, Comun. Mus. Buenos Aires i, n. sp.
- Gminatus nigroscutellatus*, N. S. Wales, BREDDIN, p. 179, Deutsche ent. Zeitschr. 1900, n. sp.
- Hammatocerus lunifer*, Buenos Aires, BERG, p. 187, Comun. Mus. Buenos Aires i, n. sp.
- Helonotus calcitrans*, characters, BREDDIN, p. 175, Abh. Senckenb. Ges. xxv.
- H. pseustes*, Key Is., BREDDIN, p. 182, Deutsche ent. Zeitschr. 1900, n. sp.
- Henrichohnia* n. g. *Harpactorini*, for *H. wahnschaffei* n. sp., Java, BREDDIN, p. 184, t. c.
- Isgnatus brevispinus*, p. 180, *obliquispinus*, p. 181, Java, etc., BREDDIN, t. c., n. spp.
- Lyramma* n. g. *Ectrichodiini*, p. 44, for *L. vigil* n. sp., N. S. Wales, p. 45, BREDDIN, Ent. Nachr. xxvi.
- Mendola* n. g. *Ectrichodiini*, p. 177, for *M. puellula* n. sp., N. S. Wales, p. 178, BREDDIN, Deutsche ent. Zeitschr. 1900.
- Nabis lativentris*, habits, MARCHAL, p. 330, Bull. Soc. ent. France 1900.
- Oncocephalus voaseleri*, p. 247, *fasciatus*, p. 249, Algeria, REUTER, Ofv. Finska Forh. xlii, n. spp.
- Opinus subater*, Halmahera, BREDDIN, p. 165, Abh. Senckenb. Ges. xxv, n. sp.
- Panthous theseus*, Borneo, Sumatra, BREDDIN, p. 174, t. c.; *P. minor*, Palawan, BREDDIN, p. 182, Deutsche ent. Zeitschr. 1900 : n. spp.
- Phorastes* n. n. for *Phorus* Stål nec Montf., KIRKALDY, p. 243, Entomologist xxxiii.
- Pirates cyaneonitens*, Halmahera, BREDDIN, p. 167, Abh. Senckenb. Ges. xxv, n. sp.
- Ploiariodes brevispina* var. n. *chobauti*, REUTER, p. 187, Bull. Soc. ent. France 1900.
- Pristhesanchus femoralis*, New Guinea, HORVÁTH, p. 640, Semon Forschungsreisen v, n. sp.
- Sastrapada brevicornis*, Borneo, BREDDIN, p. 174, Deutsche ent. Zeitschr. 1900, n. sp.
- Sinca complexa*, California, CAUDELL, p. 67, Canad. Ent. xxxii, n. sp.
- Sorgiana* n. n. for *Macrophthalmus* Lap. nec Latr., KIRKALDY, p. 241, Entomologist xxxiii.
- Spheganocoris varius*, N. S. Wales, BREDDIN, p. 42, Ent. Nachr. xxvi, n. sp.
- Spheganolestes semicroceus*, New Guinea, BREDDIN, p. 45, t. c., n. sp.
- Staliastes* n. n. for *Opinus* Stål nec Lap., KIRKALDY, p. 241, Entomologist xxxiii.
- Sycanus pallens*, Balabac Island, Borneo, BREDDIN, p. 178, Deutsche ent. Zeitschr. 1900, n. sp.
- Tiarodes kukenthali*, Batchian, BREDDIN, p. 166, Abh. Senckenb. Ges. xxv, n. sp.

- Toxocampellus* n. g. near *Hagia* for *T. sanguineus* n. sp., Borneo, BREDDIN, p. 170, pl. ix, fig. 11, t. c.  
*Velitra albipennis*, Üliasser, BREDDIN, p. 165, t. c., n. sp.

## ANTHOCORIDÆ.

- Anthocoris variipes*, pl. xix, fig. 23, p. 324, *variicornis*, *rufotinctus*, fig. 24, *dentipes*, fig. 25, p. 325, Centr. America, CHAMPION, Biol. Centr.-Amer. Rhynch. ii, n. spp.  
*Asthenidea bifasciata*, Panama, CHAMPION, pl. xix, fig. 13, p. 318, t. c. n. sp.  
*Cardiastethus tropicalis*, pl. xix, fig. 28, *rugicollis*, p. 331, Centr. America, CHAMPION, t. c. n. sp.  
*Dolichomerium* n. n. for *Dolichomerus* Reut. nec Macq., KIRKALDY, p. 242, Entomologist xxxiii.  
*Eulasiocolpus* n. g. for *E. megalops* n. sp., Centr. America, pl. xix, figg. 6, 7, CHAMPION, p. 313, Biol. Centr.-Amer. Rhynch. ii.  
*Lasiophiloides* n. g. for *L. denticulatus* n. sp., Guatemala, pl. xix, fig. 3, CHAMPION, p. 311, t. c.  
*Lasiophilus nebulosus* Uhl. to *Asthenidea*, p. 317, figure, pl. xix, fig. 12, CHAMPION, t. c.  
*L. punctipennis*, pl. xix, fig. 1, *microps*, *reuteri*, fig. 2, p. 308, *foveicollis*, p. 309, *sulcatus*, *divisus*, p. 310, Centr. America, CHAMPION, t. c. n. spp.  
*Lasiocolpoides* n. g., p. 313, for *L. ciliatus* n. sp., Guatemala, p. 314, pl. xix, fig. 8, CHAMPION, t. c.  
*Lasiocolpus sinuaticollis*, p. 312, figure, pl. xix, fig. 5, CHAMPION, t. c.  
*L. minor*, Panama, CHAMPION, p. 312, t. c. n. sp.  
*Macrotrachelia elongata*, pl. xix, fig. 14, p. 319, *albonitida*, fig. 15, *nitida*, fig. 16, *thripiformis*, fig. 17, p. 320, *opacipennis*, fig. 20, p. 321, Centr. America, CHAMPION, t. c. n. spp.  
*Macrotracheliella* n. g. for *M. laevis* n. sp., Centr. America, pl. xix, figg. 21, 22, CHAMPION, p. 322, t. c.  
*Melanocoris* n. g., p. 329, for *M. obovatus* n. sp., Guatemala, p. 330, pl. xix, fig. 27, CHAMPION, t. c.  
*Paratriphleps* n. g., p. 328, for *P. laeviusculus* n. sp., Panama, pl. xix, fig. 26, p. 329, CHAMPION, t. c.  
*Piezostethus albonotatus*, pl. xix, fig. 10, *bimaculatus*, fig. 11, Guatemala, CHAMPION, p. 316, t. c. n. spp.  
*Plochiocoris* n. g., p. 314, for *Lasiophilus basalis* Uhler, figured, pl. xix, fig. 9, CHAMPION, t. c.  
*Poronotus*, restored for *P. constrictus*, CHAMPION, p. 333, t. c.  
*Scoloposcelis flavicornis*, pl. xix, fig. 32, CHAMPION, t. c.  
*Solenonotus sulcifer*, figure, CHAMPION, p. 334, pl. xix, fig. 30, t. c.  
*S. canaliculatus*, p. 334, *nigromarginatus*, p. 335, pl. xix, fig. 31, Centr. America, id. t. c. n. spp.  
*Triphleps pumilio*, p. 327, *aterrimus*, p. 328, Centr. America, id. t. c. n. spp.

## CERATOCOMBIDÆ, CIMICIDÆ, SALDIDÆ.

- Acanthia variabilis* var. n. *mendica*, REUTER, p. 156, Bull. Soc. ent. France 1900.  
*A. niveo-limbata*, Senegal, REUTER, p. 156, t. c.; *A. (Chiloxanthus) pygmaea*, Morocco, REUTER, p. 188, t. c. : n. spp.  
*Ceratocombus panamensis*, Bugaba, CHAMPION, p. 336, Biol. Centr.-Amer. Rhynch. ii, n. sp.



- Hæmatosiphon* n. g. for *Acanthia inodora* Dug., figured, pl. xx, fig. 1, CHAMPION, p. 337, t. c.  
*Salda signoreti*, p. 339, pl. xx, fig. 2, *ventralis*, fig. 9, p. 342, characters, CHAMPION, t. c.  
*S. laevis*, pl. xx, fig. 3, p. 339, *sulcicollis*, fig. 4, *opacipennis*, fig. 5, p. 340, *comata*, fig. 6, *tropicalis*, fig. 7, p. 341, *quadrimaculata*, fig. 8, *abdominalis*, fig. 10, p. 343, Centr. America, CHAMPION, t. c. n. spp.

## CAPSIDÆ.

- Amblytylus vittiger*, Algeria, REUTER, p. 152, Ofv. Finska Forh. xlii, n. sp.  
*Anonychchia* n. g. near *Atomoscelis*, for *A. fokkeri* n. sp., Arabia, REUTER, p. 134, t. c.  
*Aphenophyes* n. g. near *Campylomma*, p. 135, for *A. laticeps* n. sp., Algeria, p. 136, REUTER, t. c.  
*Atractotomus mali* = (*Reduvius malinellus* Pomin.), GIARD, p. 359, Bull. Soc. ent. France 1900.  
*A. brevicornis*, p. 140, *schmiedeknechti*, p. 141, Algeria, REUTER, Ofv. Finska Forh. xlii, n. spp.  
*Brachybasis* n. g. near *Megacelum*, for *B. desertorum* n. sp., Algeria, REUTER, p. 255, t. c.  
*Calocoris porphyropterus* var.  $\beta$ , REUTER, p. 158, t. c.  
*Campptobrochis punctulatus* var. n. *beckeri*, REUTER, p. 265, t. c.  
*Compsidolon* n. g. near *Psallus*, p. 147, for *C. elegantulum* n. sp., Syria, p. 148, REUTER, t. c. n. spp.  
*Globiceps subalpinus*, Styria, STROBL, p. 193, Mt. Ver. Steiermark xxxvi, n. sp.  
*Macrotylus geniculatus*, Algeria, p. 151, *montandoni*, Roumania, p. 152, REUTER, Ofv. Finska Forh. xlii, n. spp.  
*Megacoleus cunealis*, Algeria, REUTER, p. 153, t. c. n. sp.  
*Ochrodema* n. g. near *Tuponia*, p. 132, for *O. fuscicornis* n. sp., Biskra, p. 133, REUTER, t. c.  
*Omphalonotus anomalus*, Egypt, REUTER, p. 155, t. c. n. sp.  
*Oncotylus bolivari*, Spain, REUTER, p. 261, t. c. n. sp.  
*Orthopidea* n. g. near *Plagiognathus*, p. 138, for *O. fusciceps* n. sp., Algeria, p. 139, REUTER, t. c.  
*Orthotylus marginalis* var. n. *oraniensis*, REUTER, p. 155, t. c.  
*O. viridipunctatus*, Roumania, id. p. 154, t. c.; *O. gracilis*, Algeria, REUTER, p. 263, t. c. : n. spp.  
*Pachytomella ænescens*, Algeria, REUTER, p. 157, t. c. n. sp.  
*Paramixia* n. g. near *Amixia*, for *P. suturalis* n. sp., Nile Valley, REUTER, t. c.  
*Phylidea* n. g. near *Phylus*, p. 149, for *P. femoralis* n. sp., S. France, p. 150, REUTER, t. c.  
*Phylus breviceps*, Syria, REUTER, p. 150, t. c. n. sp.  
*Phytocoris bleusei*, p. 159, *atomophorus*, p. 160, Algeria, REUTER, t. c.; *P. desertorum*, p. 251, *albohirsutus*, p. 252, Algeria, REUTER, t. c.; *P. retame*, Algeria, REUTER, p. 266, t. c. : n. spp.  
*Plagiognathus fulvipennis* var. n. *diversicornis*, REUTER, p. 140, t. c.  
*P. pallidus*, Algeria, REUTER, p. 257, t. c. n. sp.  
*Plagiotylus dispar*, Syria, REUTER, p. 156, t. c. n. sp.  
*Pronototropis longicornis*, Syria, REUTER, p. 259, t. c. n. sp.  
*Psallus pici*, *divergens*, p. 142, *pulchellus*, p. 143, Algeria, *fokkeri*, Ivica, p. 144, *ericetorum*, Corfu, p. 145, *vicinus*, Mallorca, p. 146, REUTER, t. c. n. spp.  
*Solenoxyphus reticulatus*, Wallachia, REUTER, p. 260, t. c. n. sp.  
*Sthenarus fuscicornis*, p. 136, *flavipes*, p. 137, Algeria, REUTER, t. c. n. spp.

*Trigonotylus pallidicornis*, Algeria, REUTER, p. 161, t. c. n. sp.  
*Tuponia montandoni*, Roumania, REUTER, p. 131, t. c. n. sp.

## HYDROCORISÆ.

Testes of *Zaitia*; MONTGOMERY (921).  
*Anisops aphrodite*, Congo, KIRKALDY, p. 435, Ann. Soc. ent. Belgique xlv, n. sp.  
*Belostoma gestroi*, S. America, MONTANDON, p. 537, Ann. Mus. Genova xl, n. sp.  
*Corisa* and *Sigara*; stridulating organs, HANDLIRSCH, pp. 134-141, pl. vii, Ann. Hofmus. Wien xv.  
*Corixa lateralis* Leach = (*hieroglyphica* Duf.), KIRKALDY, p. 10, Entomologist xxxiii.  
*Enithares indica* = (*Not. abbreviata* Kirby), *E. brasiliensis* = (*Bothronotus grandis* Fieb.), KIRKALDY, p. 10, t. c.  
*Laccotrephes papuus*, New Guinea, MONTANDON, p. 539, Ann. Mus. Genova xl, n. sp.  
*Limnocoris volxemi*, characters, MONTANDON, p. 421, Termes. Fuzetek xxiii.  
*L. horvathi*, Peru, id. p. 420, t. c. n. sp.  
*Macrocoris parviceps*, E. Africa, MONTANDON, p. 422, t. c. n. sp.  
*Naucoris cimicoides*, stridulation, HANDLIRSCH (555).  
*Notonecta triangularis* Guer. = (*simplex* Kirby 1891) and *templetonii* Kirby referred to *Enithares*, *N. indica* L. = (*americana* Fab. and *unifasciata* Guer.), KIRKALDY, p. 10, Entomologist xxxiii.  
*Nychia marshalli* var. n. *sappho*, KIRKALDY, p. 809, Ann. Mus. Genova xl.  
*Palæoheteroptera* and *Palæonepidoides* n. genn., vide Palæoentomology p.  
*Ranatra linearis*, oviposition, ENOCK, p. xii, P. ent. Soc. London 1900, and p. 161, Ent. Mag. xxvi; *R. linearis*, defensive attitude, PLATEAU (1044).

## HEMIPTERA-HOMOPTERA.

[The following memoirs relate to *Hemiptera-Homoptera*, viz. :—ANNANDALE (32), BAKER (55, 56, 57), BALL (58, 59, 60), BREDDIN (172), DISTANT (328, 330), FABRE (385), FOWLER (511), GREEN (526), GRUNER (542), HANDLIRSCH (554, 555), HANSEN (562), HORVÁTH (605), KIRBY (725), KIRKALDY (729, 730, 733), MATSUMURA (866, 868), MELICHAR (891, 892, 893), OSBORN (967, 969, 970, 971), PAZLAVSKY (981), STROBL (1290), THEN (1313). Also *Psyllidæ* p. 331, *Aphidæ* p. 331, *Aleurodidæ* p. 332, and *Coccidæ* p. 332.]

Antennæ etc. ; translation of HANSEN's 1890 paper, HANSEN (562).

## CICADIDÆ.

Malay method of attracting *Dundubia*, ANNANDALE, P. Zool. Soc. London 1900, pp. 859-862.

*Cicada sinclairii*, attacked by *Cordyceps*, BENHAM (96).

*Baturia exhausta*, characters, BREDDIN, p. 181, Abh. Senckenb. Ges. xiv, n. sp.

*Cicada septendecim*, brood xx in Ohio in 1900, WEBSTER, p. 638, Ent. News Philad. xi.

*C. daiuac*, Borneo, BREDDIN, p. 180, Abh. Senckenb. Ges. xiv, n. sp.

*Cosmopsaltria alfur*, Celebes, BREDDIN, p. 177, pl. ix, fig. 12, t.

- Dorachosa explicata*, figured, pl. vi, fig. 14, DISTANT, Biol. Centr.-Amer. Rhynch. Homopt. i.  
*Fidicina oleacea* referred to *Cicada* and figured, p. 42, pl. vi, fig. 17, *F. amena*, fig. 15, *cachla*, fig. 16, figured, DISTANT, Biol. Centr.-Amer. Rhynch. Homopt. i.  
*Pomponia diffusa*, Borneo, BREDDIN, p. 179, Abh. Senckenb. Ges. xxv, n. sp.  
*Talainga chinensis*, Fokien, DISTANT, p. 209, Entomologist xxxiii, n. sp.

### FULGORIDÆ (s. l. incl. FLATIDÆ, etc.).

- The *Fulgoridæ* of Japan, MATSUMURA, Ent. Nachr. xxvi, pp. 205-213 and 257-269.  
 The prolonged head used for jumping, ANNANDALE, p. 866, P. Zool. Soc. London 1900.  
*Acanalonia virescens* figured, pl. vii, fig. 7, p. 49, FOWLER, Biol. Centr.-Amer. Rhynch. i.  
*A. dubia*, p. 46, pl. vii, fig. 1, *panimæ*, fig. 2, *calata*, fig. 3, p. 47, *pinniformis*, fig. 4, *affinis*, fig. 5, *gaumeri*, fig. 6, p. 48, *delicatula*, fig. 8, *concinna*, fig. 9, p. 49, Centr. America, FOWLER, t. c. n. spp.  
*Apateson* n. g. *Ricanina*, for *A. albomaculatum*, n. sp., Centr. America, pl. viii, fig. 15, FOWLER, p. 70, t. c.  
*Armacia consobrina*, characters, BREDDIN, p. 196, Abh. Senckenb. Ges. xxv.  
*Benna olivacea*, Japan, MATSUMURA, p. 213, Ent. Nachr. xxvi, n. sp.  
*Bidis aristella*, Christmas Is., KIRBY, p. 136, pl. xv, figg. 12, 13, Monogr. Christmas Island, n. sp.  
*Bladina magnifrons*, figured, pl. viii, fig. 14, FOWLER, p. 69, Biol. Centr.-Amer. Rhynch. Homopt. i.  
*Chlorionidea testacea*, Japan, MATSUMURA, p. 257, Ent. Nachr. xxvi, n. sp.  
*Cicriopsis* n. g. *Dictyopharida*, p. 207, for *C. punctatus*, n. sp., Japan, p. 208, MATSUMURA, t. c.  
*Cladypha bugabensis*, Panama, pl. vi, fig. 12, *rufivena*, Mexico, fig. 11, p. 44, FOWLER, Biol. Centr.-Amer. Rhynch. Homopt. i, n. spp.  
*Colgar* n. n. for *Atella* Stål nec Doubl., KIRKALDY, p. 242, Entomologist xxxiii.  
*Conicoda* n. g. *Delphacides*, p. 258, for *C. graminea*, p. 259, *nigra*, p. 260, n. spp., Japan, MATSUMURA, Ent. Nachr. xxvi.  
*Dascalua nietoi*, Mexico, FOWLER, p. 59, pl. vii, fig. 26, Biol. Centr.-Amer. Rhynch. Homopt. i, n. sp.  
*Delphacinus alpinus*, Styria, STROBL, p. 203, Mt. Ver. Steiermark xxxvi, n. sp.  
*Derbe westwoodi*, Centr. America, FOWLER, p. 71, pl. viii, fig. 16, Biol. Centr.-Amer. Homopt. i, n. sp.  
*Dicranotropis albovitata*, Japan, MATSUMURA, p. 269, Ent. Nachr. xxvi, n. sp.  
*Dictyophara pallida*, note, p. 43, pl. v, figg. 1-6, Ind. Mus. Notes v.  
*D. orbiculata*, Mexico, DISTANT, p. 41, pl. vi, fig. 9, Biol. Centr.-Amer. Rhynch. Homopt. i, n. sp.  
*Dictyopharoides* n. g. for *D. tenuirostris*, n. sp., Mexico, pl. vi, fig. 10, FOWLER, p. 44, Biol. Centr.-Amer. Rhynch. Homopt. i.  
*Epeurya* n. g. near *Eurya*, for *E. nawaii*, n. sp., Japan, MATSUMURA, p. 261, Ent. Nachr. xxvi.  
*Eurybrachys westwoodi* Kirb., referred to *Messena*, KIRKALDY, p. 294, Entomologist xxxiii.  
*Flatidæ* and subfamilies discussed, FOWLER, p. 45, Biol. Centr.-Amer. Rhynch. Homopt. i.

- Flata conspersa*, note, p. 54, figure, pl. vii, fig. 17, FOWLER, t. c.  
*F. championi*, p. 51, pl. vii, fig. 10, *rotundior*, fig. 11, *punctata*, *rufocinctata*, fig. 12, p. 52, *monticola*, fig. 13, *corrupta*, fig. 14, *regularis*, fig. 15, *perpusilla*, fig. 16, p. 53, Centr. America, FOWLER, t. c. n. spp.  
*Flatoides humeralis*, pl. viii, fig. 1, variation, p. 60, *obliquus* Walk. (as *Eliciptera*), fig. 6, p. 64, FOWLER, t. c.  
*F. quadripunctulus*, pl. viii, fig. 2, *scaber*, fig. 3, *levior*, p. 61, *pollutus*, fig. 4, *simillimus*, p. 62, *griseus*, *isabellinus*, fig. 5, p. 63, Centr. America, FOWLER, t. c. n. spp.  
*Geisha* n. g. for *Paciloptera distinctissima* Walk., KIRKALDY, p. 296, Entomologist xxxiii.  
*Gatulia plunipennis*, figure, variation, FOWLER, p. 68, pl. viii, fig. 13, Biol. Centr.-Amer. Rhynch. Homopt. ii.  
*Hindola* n. n. for *Carystus* Stål, nec Hubn., KIRKALDY, p. 243, Entomologist xxxiii.  
*Iesus*? *andrewsi*, Christmas Is., KIRBY, p. 138, pl. xv, fig. 15, Monogr. Christmas Island, n. sp.  
*Jamaicastes* n. n. for *Domitia* Stål nec Th., KIRKALDY, p. 243, Entomologist xxxiii.  
*Kalidasa* n. n. for *Phoronis* Stål nec Wright, KIRKALDY, p. 243, t. c.  
*Liburnia nipponica*, *devastans*, p. 262, *minoensis*, p. 263, *gifuensis*, p. 264, *yezoana*, *nagarugawana*, p. 265, *akashiensis*, *maikoensis*, p. 266, *lyraformis*, p. 267, *albifascia*, p. 268, Japan, MATSUMURA, Ent. Nachr. xxvi, n. spp.  
*Melicharia* n. g. *Packillopterina*, for *Paciloptera quadrata* Kirby, KIRKALDY, p. 294, Entomologist xxxiii.  
*Mimophantia* n. g. *Flatides*, for *M. maritima*, n. sp., Japan, MATSUMURA, Ent. Nachr. xxvi.  
*Mindura hemerobii* referred to *Sassula*, KIRKALDY, p. 10, Entomologist xxxiii.  
*Mysidia costata*, pl. viii, fig. 18, *nebulosa*, fig. 19, p. 73, FOWLER, Biol. Centr.-Amer.  
*M. acidalioides*, pl. viii, fig. 17, p. 72, *parviceps*, p. 20, *maculicosta*, fig. 21, *elator*, fig. 22, p. 73, *delicatissima*, fig. 23, *M.?* *spreti*, p. 74, Centr. America, FOWLER, t. c. : n. spp.  
*Nephesa spumans*, Celebes, BREDDIN, p. 199, Abh. Senckenb. Ges. xxv, n. sp.  
*Nogodina subguttata* var.?, BREDDIN, p. 197, t. c.; *N. affinis*, fig. 8, *hyalina*, fig. 9, pl. xv, p. 134, KIRBY, Monogr. Christmas Island.  
*N. subviridis*, Christmas Is., id. t. c., p. 135, pl. xv, figs. 10, 11; *N. umbra*, Celebes, BREDDIN, p. 197, Abh. Senckenb. Ges. xxv : n. spp.  
*Oliarus flaviceps*, Japan, MATSUMURA, p. 208, Ent. Nachr. xxvi, n. sp.  
*Ormenis pulverulenta*, figured, pl. vii, fig. 18, FOWLER, Biol. Centr.-Amer. Rhynch. Homopt. i.  
*O. nigrolimbata*, pl. vii, fig. 19, p. 55, *ermisia*, fig. 20, *dolabrata*, fig. 21, p. 56, *squamulosa*, fig. 22, *albescens*, fig. 23, *griseoalba*, fig. 24, p. 57, *inferior*, fig. 25, p. 58, Centr. America, FOWLER, t. c. n. spp.  
*Otiocerus sapporoensis*, Japan, MATSUMURA, p. 209, Ent. Nachr. xxvi; *O. montanus*, pl. viii, fig. 24, p. 74, *interruptus*, *venustus*, fig. 25, *griseus*, fig. 26, p. 75, *gracilior*, fig. 27, *breviceps*, pl. ix, fig. 1, *O.?* *rufescens*, fig. 2, p. 76, Centr. America, FOWLER, t. c. n. spp.  
*Paurostauria* n. g. near *Ricanoptera*, p. 132, for *P. delicata*, n. sp., Christmas Is., pl. xv, fig. 6, p. 133, KIRBY, Monogr. Christmas Island.  
*Pochazia australis*, young, natural history, FROGGATT, p. 650, pl. fig. 6, Agric. Gaz. N. S. W. xi.  
*Ricania trifasciata*, Japan, MATSUMURA, p. 211, Ent. Nachr. xxvi; *R. depressicollis*, Borneo, p. 194, *amethystinula*, Celebes, p. 195, BREDDIN. Abh. Senckenb. Ges. xxv; *R. flavifrontalis*, Christmas Is., f

- p. 131, pl. xv, fig. 5, Monogr. Christmas Island; *R. bugabensis*, pl. viii, fig. 7, *feralis*, fig. 8, Panama, FOWLER, p. 65, Biol. Centr.-Amer. Rhynch. Homopt. i : n. spp.
- Sasula pictifrons*, figures, variation, FOWLER, p. 67, pl. viii, figg. 9-11, t. c. *S. costalis*, Nicaragua, FOWLER, p. 68, pl. viii, fig. 12, t. c. n. sp.
- Scamandra medea*, Borneo, BREDDIN, p. 193, Abh. Senckenb. Ges. xxv, n. sp.
- Scarpanta tennentina* = (*latipennis* Kirby), KIRKALDY, p. 295, Entomologist xxxiii.
- Stenocranus styriacus*, Steinbruck, STROBL, p. 204, Mt. Ver. Steiermark xxxvi, n. sp.
- Tettigometra bipunctata*, Japan, MATSUMURA, p. 210, Ent. Nachr. xxvi, n. sp.
- Tonga* n. n. for *Cyrene* Westw. nec Heck., KIRKALDY, p. 242, Entomologist xxxiii.
- Varcia flavicostalis*, pl. xv, fig. 7, p. 133, KIRBY, Monogr. Christmas Island.
- Zoraida* n. n. for *Thracia* Westw. nec Blainv., KIRKALDY, p. 242, Entomologist xxxiii.

## MEMBRACIDÆ.

- Relations of species with ants in Ceylon; excretory tube of larva, GREEN, p. 185, Ent. Mag. xxxvi, cut.
- Adippe maculata*, note on, DISTANT, p. 694, Tr. ent. Soc. London 1900.
- A. heretica*, Centr. America, (= *maculata* Fowl. nec Dist.), DISTANT, p. 694, t. c. n. sp.
- Hyphinoe proclivis*, *thoracata*, Costa Rica, DISTANT, p. 695, t. c. n. spp.
- Gargaropsis* Fowler is the Centrotine genus *Macropsis*, BALL, pp. 128-130, Psyche ix.
- Macropsis* = (*Gargaropsis* Fowl.); BAKER's recent species discussed, *M. lata* var. n. *pæta*, BALL, pp. 128-130, Psyche ix.

## CERCOPIDÆ.

- The production of foam by *Aphrophora*, FABRE (385), GRUNER (542).
- Aphrophora alpina*, Tyrol, MELICHAR, p. 58, Wien. ent. Zeit. xix, n. sp.
- Cercopsis semicincta* Walk. 1870, referred to *Cosmoscarta* and renamed *C. cyane*, BREDDIN, p. 183, pl. ix, figg. 13, 14, Abh. Senckenb. Ges. xxv.
- Clastoptera*; synonymy of some species and varr., *lineaticollis* Stål = (*delicata* Uhl.), BAKER, pp. 463, 464, Ent. News Philad. xi.
- C. bimaculata*, Mexico, BAKER, p. 464, t. c. n. sp.
- Clovia eximia*, Christmas Is., KIRBY, p. 137, pl. xv, fig. 14, Monogr. Christmas Island, n. sp.
- Cosmoscarta*; observations and synonymical notes, DISTANT, pp. 681-683, Tr. ent. Soc. London 1900; *C. laticincta* Walk., p. 182, *C. inexacta* Walk. (as *Cercopsis*), p. 184, pl. ix, fig. 15, characters, BREDDIN, Abh. Senckenb. Ges. xxv.
- C. aganippe*, p. 185, pl. ix, figg. 16, 17, *arethusa*, fig. 18, p. 186, *pirene*, fig. 19, p. 187, *amymone*, figg. 20, 21, p. 188, *dryope*, fig. 22, p. 189, *Celebes*, *eli*, Borneo, figg. 23, 24, p. 190, BREDDIN, Abh. Senckenb. Ges. xxv; *C. maura*, Batchian, p. 666, *butleri*, Perak, *sulukensis*, Sulu Ids., p. 667, *obiensis*, Obi Is., *naiteara*, pl. ix, fig. 1, p. 668, *velata*, India, *roborea*, Malasia, pl. ix, fig. 2, *solicuga*, Borneo, fig. 3, *chersonesia*, Perak, fig. 4, *mandaru*, fig. 5, p. 670, *militaris*, *auratilis*, New

- Guinea, p. 671, *whiteheadi*, *consociata*, Philippines, p. 672, *demonstrata*, fig. 6, *mandarina*, fig. 7, p. 673, *macgillivrayi*, China 1, *tennantii*, Ceylon, p. 674, *raja*, India, *ophir*, fig. 8, *scabra*, Perak, *horsfieldi*, Java, p. 676, *ignifera*, Borneo, *menaca*, India, etc., p. 677, *castanea*, *nagassana*, *montana*, India, p. 678, *metallica*, Burma, *sanguinolenta*, China, p. 679, *turaja*, Celebes, *thoracica*, *putamara*, p. 680, *nilgirensis*, p. 681, India, DISTANT, Tr. ent. Soc. London 1900 : n. spp.
- Phymatostetha stali* = (*Cosmoscarta sikkimensis* Atk.); *P. punctifascia* (Walk.) referred to *Aphrophorina*, DISTANT, p. 686, Tr. ent. Soc. London 1900.
- P. nangla*, pl. ix, fig. 9, p. 683, India, *flavopicta*, Philippines, *sema*, fig. 10, p. 684, *renigma*, fig. 11, India, *karenia*, fig. 12, Burma, p. 685, *bracteata*, Borneo, p. 686, DISTANT, t. c. n. spp.
- Sphenorhina biolleyi*, *quota*, Costa Rica, DISTANT, p. 693, t. c. n. spp.

## JASSIDÆ.

- Agallia hispanica*, Ciudad Real, HORVÁTH, p. 128, Termes. Fuzetek xxiii ; *A. reticulata*, *clitellaria*, Hayti, p. 127, *barretti*, Mexico, p. 128, BALL, Psyche ix : n. spp.
- Athysanus artemisia*, Hungary, MATSUMURA, p. 233, SB. Ges. naturf. Berlin ; *A. potanini*, p. 38, *dubitans*, *detersus*, p. 39, *debilis*, p. 40, Transbaikal and Mongolia, MELICHAR, Wien. ent. Zeit xix : n. spp.
- Balclutha* n. n. for *Gnathodus* Fieb., nec Paud., KIRKALDY, p. 243, Entomologist xxxiii.
- Chlorotettix tunicata*, *nudata*, p. 340, *stolata*, p. 341, N. America, BALL, Canad. Ent. xxxii, n. spp.
- Cicadula potoria*, Iowa, BALL, p. 346, t. c. n. sp.
- Darrhula* n. n. for *Urophora* Westw. nec. Desv., KIRKALDY, p. 242, Entomologist xxxiii.
- Deltocephalus*, monograph of Austrian, with details of male characters, THEN, Mt. Ver. Steiermark xxxii, pp. 118-169, 2 pls.
- Deltocephalus incertus*, *hilaris*, Transbaikal, MELICHAR, p. 42, Wien. ent. Zeit. xix ; *D. apicatus*, N. America, OSBORN, p. 285, Canad. Ent. xxxii ; *D. grammicus*, Colorado, BALL, p. 204, t. c. ; *D. caperatus*, N. America, *comatus*, Mexico, p. 343, *sonorus*, N. America, p. 344, *elimatus*, Mexico, *gnarus*, N. America, p. 345, BALL, t. c. : n. spp.
- Dicraneura quinquepunctata*, Irkutsk, MELICHAR, p. 34, Wien. ent. Zeit. xix, n. sp.
- Edwardsiastes* n. n. for *Glyptocephalus* Edw. nec Gotts., KIRKALDY, p. 243, Entomologist xxxiii.
- Euacanthus sibiricus*, Irkutsk, MELICHAR, p. 43, Wien. ent. Zeit. xix, n. sp.
- Eutettix magnus*, Arkansas, OSBORN, p. 395, Ent. News Philad. xi ; *E. insana*, p. 203, *stricta*, p. 204, N. America, BALL, Canad. Ent. xxxii : n. spp.
- Flosshilda* n. n. for *Autonoe* Stål nec Bruz., KIRKALDY, p. 243, Entomologist xxxiii.
- Gypona kirbyi* n. n. for *striata* Kirby, *G. walkeri* n. n. for *prasinia* Walk., KIRKALDY, p. 294, Entomologist xxxiii.
- Hilda* n. n. for *Iethmia* Walk. nec Gray, KIRKALDY, p. 243, t. c.
- Idiocerus* ; notes on synonymy and characters of *I. duxei* etc., Canad. Ent. xxxii, pp. 207, 208.
- I. ? punctatus*, Christmas Is., KIRBY, p. 138, pl. xv, fig. 16, Monogr. Christmas Island : n. sp.
- Krisna* n. n. for *Siva* Spin. nec Hodgs., KIRKALDY, p. 243, Entomologist xxxiii.



- Lonatura nebulosa*, p. 341, *noctivaga*, p. 342, N. America, BALL, Canad. Ent. xxxii, n. spp.
- Macropsis idioceroideus*, New Mexico, p. 55, *atra*, California, *smithii*, *sordidus*, p. 56, S. America, *californicus*, *magnus*, p. 57, *rufoscutellatus*, *alabamensis*, p. 58, N. America, *stramineus*, Brazil, p. 59, BAKER, Psyche ix, n. spp.
- Nirvana* n. g. *Jassina*, for *N. pseudommatos* n. sp., Ceylon, KIRKALDY, p. 293, Entomologist xxxiii.
- Paramesus rotundiceps* ♀, MELICHAR, p. 238, Wien. ent. Zeit. xix.
- P. furcatus*, N. America, OSBORN, p. 285, Canad. Ent. xxxii, n. sp.
- Pediopsis latestriata*, Admont, STROBL, p. 209, Mt. Ver. Steiermark xxxvi, n. sp.
- Phlepsius josea*, Colorado, BALL, p. 347, Canad. Ent. xxxii; *P. lascivius*, *turpiculus*, p. 200, *graphicus*, p. 201, *cumulatus*, with var. *arctostaphyle*, p. 202, *albidus*, p. 203, N. America, BALL, t. c. : n. spp.
- Platymetopus hyalinus*, N. America, OSBORN, p. 501, Ent. News Philad. xi; *P. ornatus*, *oregonensis*, p. 49, *latus*, N. America, *tenuifrons*, S. America, p. 50, BAKER, Canad. Ent. xxxii : n. spp.
- Rhytistylus pellucidus* Fieb., description and figg., MELICHAR, pp. 268-270, Wien. ent. Zeit. xix.
- Scaphoides*, revision of the genus, OSBORN, J. Cincinnati Soc. xix, pp. 187-209, pls. ix, x.
- S. fasciatus*, Haiti and Mexico, p. 190, *mexicanus*, Mexico, p. 197, *productus*, p. 200, *carinatus*, p. 201, *melanotus*, p. 206, *obtus*, p. 207, *cinerosus*, p. 208, N. America, OSBORN, t. c. n. spp.
- Tettigonia*; the following figured, *rufofasciata*, pl. xvii, fig. 1, *scutellata*, fig. 3, *costaricensis*, fig. 6, *pulchella*, fig. 8, with var. *proxima*, fig. 9, *flavoguttata*, fig. 10, *areolata*, fig. 11, *laudata*, fig. 13, *sexguttata*, fig. 14, *jucunda*, fig. 16, *sanguinolenta*, fig. 17, *guttata*, fig. 18, *vulnerata*, fig. 21, *venusta*, fig. 25, *multicolor*, fig. 26, *atropunctata*, fig. 27, *lutea*, pl. xviii, fig. 1, *lucasi*, fig. 3, *mollipes*, fig. 15, *quadrivittata*, fig. 20, *cœruleovittata* var. n. *delineata*, fig. 23, p. 277, *urbana*, fig. 25, *limbaticollis*, fig. 27, *occatoria*, fig. 29, *sexlineata*, fig. 30, *rufimargo*, pl. xix, fig. 11, with var. n. *proprior*, fig. 12, p. 284, *variegata*, fig. 27, FOWLER, Biol. Centr.-Amer. Rhynch. Homopt. ii.
- T. kulidasa*, Ceylon, KIRKALDY, p. 294, Entomologist xxxiii; *T. bilineata*, pl. xvi, fig. 27, *laniata*, fig. 28, *distinguenda*, fig. 29, *ostrina*, fig. 30, p. 257, *detracta*, p. xvii, fig. 2, p. 258, *trivirgata*, fig. 4, *purpurascens*, fig. 5, p. 259, *rubricollis*, fig. 7, p. 260, *collata*, fig. 12, p. 261, *sociata*, fig. 15, p. 262, *coccinea*, fig. 19, *bilineki*, fig. 20, p. 203, *recta*, fig. 22, p. 264, *aqua*, fig. 23, *albiceps*, fig. 24, p. 265, *reservata*, pl. xviii, fig. 2, p. 267, *completa*, fig. 4, p. 268, *delicata*, fig. 5, *fuscodorsata*, fig. 6, *verecunda*, fig. 7, p. 269, *induta*, fig. 8, *clepsydra*, fig. 9, p. 270, *flavivitta*, fig. 10, *compta*, fig. 11, *tunicata*, fig. 12, p. 271, *sororia*, fig. 13, *civilis*, fig. 14, p. 272, *notaticeps*, fig. 16, p. 273, *diducta*, fig. 17, *innervis*, p. 274, *prolixa*, fig. 18, *virgaticeps*, fig. 19, p. 275, *redacta*, fig. 21, *idonea*, fig. 22, p. 276, *composita*, fig. 24, p. 277, *flaccida*, *obtusior*, fig. 26, p. 278, *anceps*, fig. 28, p. 279, *carissima*, pl. xix, fig. 1, p. 280, *anita*, fig. 2, *lativittata*, fig. 3, *salutaris*, fig. 4, p. 281, *infusata*, fig. 5, *dorsisignata*, fig. 6, *rubescens*, fig. 7, p. 282, *aurilineata*, fig. 8, *lemniscata*, fig. 9, p. 283, *luculenta*, fig. 10, p. 284, *pectoralis*, fig. 13, *miniaticeps*, fig. 14, *spectanda*, fig. 15, p. 285, *rufopapicata*, fig. 16, *orbata*, fig. 17, p. 286, *pileata*, fig. 18, *concinna*, fig. 19, *teres*, fig. 20, p. 287, *robustula*, fig. 21, *satelles*, fig. 22, *mollicula*, fig. 23, p. 288, *mollicella*, fig. 24, *tenera*, p. 289, *fuscolinella*, pl. xix, fig. 25, *psittacella*, fig. 26, p. 290, *nasuta*, fig. 28, *angustula*, fig. 29, p. 291, with var. *immaculata*, fig. 30, p. 292, Central America, FOWLER, t. c. n. spp.
- Thamnotettix kuhlgatzii*, Berlin, MATSUMURA, p. 232, SB. Ges. naturf.

- Berlin 1900; *T. elegans, ornatus*, E. Siberia, MELICHAR, p. 36, Wien. ent. Zeit. xix; *T. chiragica, osborni*, p. 337, *heidemannii*, p. 338, *cockerelli*, N. America, *perexigua*, Mexico, p. 339, BALL, Canad. Ent. xxxii: n. spp.  
*Thaumatosaltria* n. n. for *Acrilla* Stål nec Adams, KIRKALDY, p. 242, Entomologist xxxiii.  
*Zyza* n. n. for *Germania* Lap. nec Desv., KIRKALDY, p. 243, Entomologist xxxiii.

## PSYLLIDÆ.

[Cf. BUCKTON (192), FROGGATT (461).]

Australian *Psyllidæ*, natural history etc., FROGGATT (461).

- Aphalara carinata*, Australia, FROGGATT, p. 279, P. Linn. Soc. N. S. Wales xxv, n. sp.  
*Cardiaspis plicatuloides*, Australia, FROGGATT, t. c. n. sp.  
*Cometopsylla* n. g. for *C. rufa* n. sp., Australia, FROGGATT, p. 286, t. c.  
*Dasyopsylla* n. g. for *D. brunnea* n. sp., Australia, FROGGATT, p. 292, t. c.  
*Lasiopsylla* n. g. for *L. rotundipennis*, p. 261, *bullata*, p. 264, n. spp., Australia, FROGGATT, t. c.  
*Psylla obsoleta*, Bombay, BUCKTON, p. 35, pl. v, figg. 10-15, Ind. Mus. Notes v, n. sp.  
*Rhinocola revoluta*, p. 267, *assimilis*, p. 269, *corniculata*, p. 270, *ostreata*, p. 272, *pinnæformis*, p. 273, *liturata*, p. 274, *viridis*, p. 276, *marmorata*, p. 277, Australia, FROGGATT, P. Linn. Soc. N. S. Wales xxv, n. spp.  
*Spondyliaspis mannifera*, Australia, FROGGATT, p. 291, t. c. n. sp.  
*Theu formicosa*, p. 295, *opaca*, p. 297, *leai*, p. 298, Australia, FROGGATT, t. c. n. spp.

## APHIDÆ.

[Cf. CHOLODKOVSKY (247, 248), DOANE (334), DOERSTLING (339), GILLANDERS (509), JOHNSON (667), MORDWILKO (924), NÜSSLIN (947, 948, 949), PERGANDE (986, 987), RITTER & RÜBSAAMEN (1120), SCHOUTEDEN (1158), SMITH (1243), THEOBALD (1315), THIELE (1320), ZEHNTNER (1430).]

Biology and Morphology of *Aphidæ*, MORDWILKO (924).

Life-cycles of *Chermes* and influence of external conditions, CHOLODKOVSKY (247).

Male structures of *Chermes*, CHOLODKOVSKY (248).

Catalogue of *Aphidæ* of Belgium, SCHOUTEDEN, pp. 113-139, Ann. Soc. ent. Belgique xlv.

Natural history of *Phylloxera*, RITTER & RÜBSAAMEN (1120).

Natural history of *Mindarus*, oviposition and hatching, NÜSSLIN (947, 948).

Habits of *Aphidæ* living on trees in Britain, GILLANDERS (509).

*Aphis mali*, natural history, SMITH (1243).

*A. cymbalariae*, p. 123, *viola*, p. 127, Belgium, SCHOUTEDEN, Ann. Soc. ent. Belgique xlv, n. spp.

*Ceratovacuna lanigera*, natural history, ZEHNTNER (1430).

*Cladobius* Koch = (*Melanoxanthus* and *Pterocomma* Buckt.), PERGANDE, p. 517, P. ent. Soc. Washington ii.

*Melanoxanthus flocculosus*, forms described, SCHOUTEDEN, pp. 128-130, Ann. Soc. ent. Belgique xlv.

*Mindarus abietinus*, biology, life-cycles, NÜSSLIN (947, 948).



- Myzus heraclei* ♂, ovip. ♀, SCHOUTEDEN, p. 119, Ann. Soc. ent. Belgique xliv.
- Nectarophora caudata*, p. 513, *insularis*, *epilobii*, p. 515, Alaska, PERGANDE, P. Ac. Washington ii; *N. destructor*, N. America, JOHNSON, p. 56, cuts, Canad. Ent. xxxii : n. spp.
- Pemphigus poschingeri*, biology, life-cycles, NÜSSLIN (949).
- P. beta*, N. America, DOANE, p. 391, Ent. News Philad. xi, n. sp.
- Phorodon humilis* life-history in Kent, THEOBALD (1315); *P. inula* ♂, ovip. ♀, SCHOUTEDEN, p. 118, Ann. Soc. ent. Belgique xlv.
- Phylloxera vastatrix*, RITTER & RUBSAAMEN (1120).
- Polyocellaria* n. g., IMHOF (636).
- Rhopalosiphum viole*, N. America, PERGANDE, p. 29, Canad. Ent. xxxii, n. sp.
- Sipha schoutedeni*, Belgium, DEL GUERCIO, p. 134, Ann. Soc. ent. Belgique xlv, n. sp.

## ALEURODIDÆ.

[Cf. BUCKTON (193), QUAINANCE (1065), ZEHNTNER (1429).]

Monograph of N. American *Aleurodidae*, QUAINANCE, Bull. U. S. Dep. Agric. Ent. tech. viii.

*Aleurodes mori* var. ? in Arizona, COCKERELL, p. 366, Sci. Gossip vi; *A. longicornis* and *lactea*, metamorphosis, habits, injuries, ZEHNTNER (1429).

*A. nubilans*, India, BUCKTON, p. 36, pl. v, figg. 7-9, Ind. Mus. Notes v; *A. longicornis*, Java, ZEHNTNER, Arch. Java-Suikerindustrie, 1897, p. 381, and Overzicht van de Ziekten etc. 2<sup>e</sup> Deel, 1897, p. 33; *A. abnormis*, p. 17, pl. i, figg. 1-3, *acacia*, p. 19, figg. 4-7, *altissima*, p. 20, figg. 8-12, *coronata*, p. 22, pl. ii, figg. 13-15, *fitchi*, p. 24, figg. 16, 19, *floridensis*, p. 26, figg. 20-22, *inconspicua*, p. 28, figg. 23-25, *nephrolepidis*, p. 29, figg. 26-30, *pergandei*, p. 31, figg. 34-37, 72, *persae*, p. 32, figg. 38-40, *plumosa*, p. 33, figg. 31-33, *quercus-aquaticae*, p. 35, figg. 41-44, *spiraeoides*, p. 36, figg. 41-49, *tracheifer*, p. 38, figg. 50-52, *variabilis*, p. 39, figg. 53-55, *vittata*, p. 42, figg. 56-58, N. America, QUAINANCE, Bull. Dep. Agric. Ent. tech. viii : n. spp.

*Aleurodicus minima*, N. America, QUAINANCE, p. 47, pl. vi, figg. 65-67, t. c. n. sp.

## COCCIDÆ.

[Cf. ASHMEAD (37), BOGUE (132), BRICK (184), BUFFA (194), COCKERELL (280-286), EHRHORN (367), FRANK & KRÜGER (444), FROGGATT (462), GREEN (521-525), GUERCIO (543), HEMPEL (576-579), HOWARD (616), HUNTER (628), KING (714, 715, 716), KOCHS (740), KRÜGER & KRÜGER (785), LEONARDI (813, 814), LOCHHEAD (824), MARLATT (856, 857), MEERWARTH (883), NEWSTEAD (938, 939, 940), REH (1082-1087), SJÖSTEDT (1224), TINSLEY & COLLEGE (1322).]

Periodicity, inequality in numbers of the two sexes, REH (1083).

The locomotion of young *Coccidæ*, REH (1087).

Mode of mounting for microscope, GREEN (523).

Experiments as to power of resistance of *Diaspinæ*, REH (1082).

*Coccidæ* injurious in Britain, NEWSTEAD (939).

Natural history of *Coccidæ* injurious to fruit and vines in Germany, FRANK & KRÜGER (444).

The effects of *Coccidæ* on vegetation, KOCHS (740).

The injuries of *Coccidæ* to fruit in Germany, KRÜGER & KRÜGER (785).

The known species and the literature of Indian *Coccidæ*, GREEN, Ind. Mus. Notes v, p. 1.

*Coccidæ* in Massachusetts, plants etc., KING, pp. 116-118, Psyche ix.

*Coccidæ* of the ivy in N. America, KING, pp. 214, 215, Canad. Ent. xxxii.

The *Coccidæ* of Brazil, HEMPEL (576).

The Encyrtid destroyers of *Coccidæ*; names of the scales and parasites, ASHMEAD (37).

*Aclerda deberlesii*, Italy, BUFFA (194), n. sp.

*Anoplaspis* n. g. type *Aspidiotus bambusarum* Cock., LEONARDI, p. 344, Riv. Patol. Veg. viii.

*Anoplaspis* and *Froggattiella*, queried as one, COCKERELL, p. 72, Psyche ix. *Antonina crawi*, Japan, COCKERELL, p. 70, t. c. n. sp.

*Aonidia*, composition of genus, LEONARDI, pp. 204, 205, Riv. Patol. Veg. viii; *A.* monograph, with *Cryptoaonidia* subg. n. for *Aspidiotus hackee* Mask., LEONARDI, pp. 320-337, t. c.

*A. ebeni* (Green), p. 329, *messuæ* (Green), p. 331, Ceylon, LEONARDI, t. c.; *A. spatulata*, p. 73, pl. c, figg. 10-13, *crenulata*, pl. d, figg. 14, 15, *messuæ*, figg. 16-18, p. 74, *perplexa*, pl. e, figg. 19, 20, *planchonioides*, figg. 21-23, p. 252, Ceylon, GREEN, J. Bombay Soc. xiii : n. spp.

*Apiococcus* n. g. *Coccinæ*, p. 401, for *A. gregarius*, p. 402, *singularis*, p. 403, *asperatus*, p. 404, *globosus*, p. 405, n. spp., Brazil, HEMPEL, Revist. Mus. Paulista iv.

*Aspidiotus* and allies, completion of monograph of, LEONARDI (814); *A. diffinis*, habitat, synonymy etc., MARLATT, Ent. News Philad. xi, pp. 425-427; *A. ostreaformis, pyri*, characters, synonymy, REH, p. 497, Zool. Anz. xxiii; *A. ostreaformis*, characters and synonymy, REH (1086); *A. trilobitiformis*=(*darutyi* Charm.), GREEN, p. 67, J. Bombay Soc. xiii; *A. theæ* var. n. *rhododendri*, GREEN, p. 67, pl. a, figg. 2, 3, J. Bombay Soc. xiii; *A. dictyospermi arecæ*, p. 68, pl. a, fig. 4, *A. orientalis* Newst.=(*osbeckiæ* Gr.), *A. transparens, destructor*, synonymy and characters, pp. 69, 70, GREEN, J. Bombay Soc. xiii; *A. dictyospermi* var. *arecæ*, note, ♀, GREEN, p. 2, pl. i, figg. 1-3, Ind. Mus. Notes v; *A. inusitatus* Green, cf. *hackee* Mask., cf. *Aonidia*; *A. bambusarum* Cock., cf. *Anoplaspis*. Synonymical list of *Aspidiotus* and allies, LEONARDI, pp. 350-363, Riv. Patol. Veg. viii; *A. perniciosus*, SJÖSTEDT (1224); *A. perniciosus*, shield, ecdysis, REH, (1084); *A. perniciosus*, structure of last segment and of that of allies, MEERWARTH (883); *A. perniciosus* Comst., life-history, REH (1085).

*A. (Diaspidiotus) cryptoxanthus*, Japan, COCKERELL, p. 71, Psyche ix; *A. (Hemiberlesia) candidulus*, Arizona, COCKERELL, p. 130, Canad. Ent. xxxii : n. spp.

*A. (Odonaspis) janeirensis*, p. 500, *A. (Chrysomphalus) paulistus*, p. 504, Brazil, HEMPEL, Revist. Mus. Paulista iv : n. spp.

*Asterolecanium variolosum* var. n. *japonicum*, COCKERELL, p. 71, Psyche ix.

*Aulacaspis boisduvalii* var. n. *maculata*, COCKERELL, p. 502, Revist. Mus. Paulista iii.

*Birchippia* n. g., p. 450, anomalous, for *B. anomala* n. sp., Australia, pl. xi, fig. 3, p. 451, GREEN, Ann. Nat. Hist. vi.

*Capulinia jaboticabæ*, natural history, HEMPEL (579).

*C. crateriformis*, Brazil, HEMPEL, p. 3, Canad. Ent. xxxii, n. sp.

*Ceroplastes egbarum* Cock., and *C. africanus* var. *cristatus* Green, are the same, GREEN, p. 158, Ann. Nat. Hist. v; *C. myricæ*, characters, pp. 8, 9, pl. ii, figg. 8-15, *C. rubens* Mask., queried as var., GREEN, Ind. Mus. Notes v; *C. irregularis*, number of eggs, COCKERELL, p. 201, Entomologist 1893.

*C. sinensis*, Italy, GUERCIO, p. 235, Bull. Soc. ent. Ital. xxii; *C. amasonicus*, p. 454, *grandis*, p. 455, *novæsi*, p. 457, *communis*, p. 459, *variegatus*, p. 462, *speciosus*, p. 464, *lucidus*, p. 465, *purpureus*, p. 466, *forma*

- p. 468, *rarus*, p. 469, *cultus*, p. 470, *cuneatus*, p. 471, *formicarius*, p. 472, *rotundus*, p. 473, *simplex*, p. 475, Brazil, HEMPEL, *Revist. Mus. Paulista* iv : n. spp.
- Chionaspis salicisnigrae*, p. 101, *americana*, p. 102, *platani*, p. 103, characters, HUNTER, Kansas Quart. ix.
- C. separata*, India, GREEN, p. 5, pl. i, figg. 9-12, Ind. Mus. Notes v : n. spp.
- Chrysomphalus dictyospermi*, varietal synonymy, COCKERELL, p. 157, Ent. Mag. xxxvi.
- Cryptinglisia* n. g. *Lecaniinae*, for *C. lounsburyi* n. sp., S. Africa, COCKERELL, p. 173, Entomologist xxxiii.
- Cryptokermes brasiliensis*, Brazil, HEMPEL, p. 398, Rev. Mus. Paulista iv, n. sp.
- Ctenochiton* ? *araucariae*, Australia, GREEN, p. 449, pl. ix, fig. 2, Ann. Nat. Hist. vi, n. sp.
- Dactylopius filamentosus* Cock. (= *vastator* Mask.), TINSLEY & COLLEGE, p. 64, Canad. Ent. xxxii.
- D. glacialis*, Italy, p. 248, *formicarius*, India, p. 249, NEWSTEAD, Ent. Mag. xxxvi ; *D. australiensis*, Victoria, GREEN, p. 13, Victorian Natural. xvii ; *D. quercus*, p. 315, *maritimus*, p. 316, California, ERHORN, Canad. Ent. xxxii ; *D. irishi*, Arizona, COCKERELL, p. 129, Canad. Ent. xxxii ; *D. texensis*, N. America, TINSLEY & COLLEGE, p. 65, t. c. ; *D. grandis*, p. 384, *setosus*, p. 386, *secretus*, p. 387, Brazil, HEMPEL, *Revist. Mus. Paulista* iv ; *D. grandis*, p. 395, *setosus*, p. 396, *secretus*, p. 397, Brazil, HEMPEL, Ann. Nat. Hist. vi, and Rev. Mus. Paulista iv : n. spp.
- Diaspidistis* n. g., for *D. multilobis* n. sp., Brazil, HEMPEL, p. 522, t. c.
- Diaspis piricola*, synonymy, habits, habitat, MARLATT, pp. 590-594, Ent. News Philad. xi.
- D. loranthi*, Ceylon, GREEN, p. 254, pl. f, figg. 25, 26, J. Bombay Soc. xiii ; *D. arizonicus*, Arizona, COCKERELL, p. 131, Canad. Ent. xxxii ; *D. australis*, Brazil, HEMPEL, p. 521, *Revist. Mus. Paulista* iv : n. spp.
- Eriochiton theae*, India, GREEN, p. 10, pl. ii, figg. 16-23, Ind. Mus. Notes v ; *E.* ? [p. 14 queried as *Ceroplastodes*] *melaleuca*, Australia, GREEN, p. 12, Victorian Natural. xvii : n. spp.
- Eriococcus*, the Australian species, FROGDATT, Agric. Gaz. N. S. W. xi, pp. 99-107, plate ; *E. quercus toumeyi* subsp. n., COCKERELL, p. 594, Ent. News Philad. xi.
- E. perplexus*, p. 381, *armatus*, p. 383, Brazil, HEMPEL, *Revist. Mus. Paulista* iv ; *E. brasiliensis* (Ckll.), *perplexus*, p. 393, *armatus*, p. 394, Brazil, HEMPEL, Ann. Nat. Hist. vi, and *Revist. Mus. Paulista* iv : n. spp.
- Fiorinia saprosmae*, pl. g, fig. 27, var. n. *gelonii*, fig. 28, GREEN, p. 256, J. Bombay Soc. xiii.
- F. theae*, India, GREEN, p. 3, pl. i, figg. 4-8, Ind. Mus. Notes v ; *F. proboscidiaria*, Ceylon, p. 256, pl. g, figg. 29-32, GREEN, J. Bombay Soc. xiii ; *F. lidgetti*, Victoria, GREEN, p. 10, Victorian Natural. xvii : n. spp.
- Greeniella*, n. g. for *Aonidia corniger* Green, COCKERELL, p. 703, Amer. Natural. xxxi 1897.
- Icerya brasiliensis*, p. 370, *schrottkyi*, p. 373, HEMPEL, *Revist. Mus. Paulista* iv ; *I. brasiliensis*, p. 389, *schrottkyi*, p. 391, Brazil, HEMPEL, Ann. Nat. Hist. vi : n. spp.
- Kermes*, notes on the genus, the young, N. American species, pp. 78-84 ; *K. galliformis* var. *eurocensis* n. var., p. 79, KING, Psyche ix ; *Kermes*, table of N. American, COCKERELL (281).
- K. trinitatus*, N. America, BOGUE, p. 205, Canad. Ent. xxxii ; *K. perryi*, Massachusetts, KING, p. 81, Psyche ix ; *K. andrei*, Massachusetts, KING, p. 22, t. c. : n. spp.

- Lecaniodiaspis rugosus*, Brazil, HEMPEL, p. 407, Revist. Mus. Paulista iv, n. sp.
- Lecanium hemisphaericum*, var. *coffea*, note, GREEN, p. 7, Ind. Mus. Notes v; *L. robiniarum* var., COCKERELL & PARROTT, p. 367, Sci. Gossip vi.
- L. watti*, India, GREEN, p. 6, pl. ii, figg. 1-5, Ind. Mus. Notes v; *L. cerasorum*, Japan, COCKERELL, p. 70, Psyche ix; *L. silveirai*, *obscurum*, Brazil, HEMPEL, p. 5, Canad. Ent. xxxii; *L. perconvexum*, Brazil, COCKERELL, p. 41, Revist. Mus. Paulista iii; *L. (Calymnatus) rhizophoræ*, Brazil, COCKERELL, p. 501, t. c.; *L. brunfelsia*, p. 418, *gracile*, p. 419, *ornatum*, p. 421, *durum*, p. 427, *glanulosum*, p. 428, *zanthoxylum*, p. 430, *infrequens*, p. 431, *discoides*, p. 433, *mayteni*, p. 438, *eugenia*, p. 439, *jaboricabæ*, p. 443, *lanigerum*, p. 446, *campomanesia*, p. 447, Brazil, HEMPEL, op. cit. iv : n. spp.
- Lichtiensia argentata*, p. 492, *L. ? attenuata*, p. 494, Brazil, HEMPEL, t. c. n. spp.
- Mytilaspis lasianthi*, p. 253, *pallida* (= *gloverii* var. olim), p. 254, Ceylon, GREEN, J. Bombay Soc. xiii; *M. indentata*, Australia, GREEN, p. 448, pl. xi, fig. 1, Ann. Nat. Hist. vi; *M. bicornis*, Victoria, GREEN, p. 9, Victorian Natural. xvii; *M. perlonga*, Brazil, COCKERELL, p. 42, Revist. Mus. Paulista iii; *M. argentatus*, Brazil, COCKERELL, p. 43, t. c. : n. spp.
- Odonaspis canaliculatus*, Ceylon, GREEN, p. 72, pl. B, figg. 6, 7, 8, c fig. 9, J. Bombay Soc. xiii, n. sp.
- Oudablis* and *Phenacoccus*, characters and relations, males, the former a subgen. of *Dactylopius*, COCKERELL, pp. 85-87, Entomologist xxxiii.
- Parlatoria*; the species and subgenera, with *websteriella* subg. n. for the *P. zizyi* group, LEONARDI, Riv. Patol. Veg. viii, pp. 203-209; *P. pergandei*, characters, HUNTER, p. 105, Kansas quart. ix.
- Paroudablis* subgen. of *Phenacoccus*, for *P. helianthi* etc., COCKERELL, p. 87, Entomologist xxxiii.
- Perissopneumon* n. g. *Monophlebides*, for *P. ferox* n. sp., India, in nests of *Oecophylla* built for the purpose of its accommodation, NEWSTEAD, p. 250, Ent. Mag. xxxvi.
- Phenacapsis* n. g., not described, for part of *Chionaspis*, COCKERELL, 1st Suppl. Check-list Cocc., p. 398 (omitted last year).
- Phenacoccus* cf. *Oudablis*, *Paroudablis*.
- P. artemisiae*, *stachyos*, p. 313, *bahia*, p. 314, California, EHRHORN, Canad. Ent. xxxii; *P. spiriferus*, Brazil, HEMPEL, p. 389, Revist. Mus. Paulista iv : n. spp.
- Protopulvinaria conveza*, Brazil, HEMPEL, p. 485, Revist. Mus. Paulista iv, n. sp.
- Pseudischnaspis* n. g. for *P. linearis* n. sp., Brazil, HEMPEL, p. 506, t. c.
- Pseudoparlatoria parlatorioides*, characters and larva, COCKERELL, p. 503, Revist. Mus. Paulista iii.
- P. noacki*, Brazil, COCKERELL, p. 42, t. c., n. sp.
- Pseudoripernia* subg. n. of *Ripernia*, COCKERELL, 1st Suppl. Check-list Cocc., p. 392 (omitted last year).
- Pulvinaria phaeæ*, *brassia*, *flocifera*, queried as identical, COCKERELL, p. 596, Ent. News Philad. xi; *P. flocifera* Westw., characters, GREEN, p. 7, Ind. Mus. Notes v; *P. innumerabilis*, *acericola*, natural history, HOWARD (616).
- P. pruni*, Kansas, HUNTER, Kansas quart. ix, p. 104; *P. tinaleyi*, New Mexico, KING, p. 360, Canad. Ent. xxxii; *P. ficus*, p. 486, *eugenia*, p. 488, *depressa*, p. 490, *grandis*, p. 491, Brasil, HEMPEL, Revist. Mus. Paulista iv : n. spp.
- Ripernia formicola*, habits, SMITH, p. 8, Ent. Mag. xxxvi.
- R. wasmanni*, Germany, NEWSTEAD, p. 249, Ent. Mag. xxxv.

- India, GREEN, p. 37, pl. vi, figg. 5, 6, Ind. Mus. Notes v; *R. serrata*, Trinidad, TINSLEY & COLLEGE, p. 66, Canad. Ent. xxxii : n. spp.
- Solenococcus* n. n. for *Solenophora*, COCKERELL, 1st Suppl. Check-list Cocc., p. 392 (omitted last year).
- S. tuberculus*, p. 390, *baccharidis*, p. 392, Brazil, HEMPEL, Revist. Mus. Paulista iv : n. spp.
- Stigmacoccus* n. g. *Coccinae*, p. 399, for *S. asper*, n. sp., Brazil, p. 400, HEMPEL, t. c.
- Tachardia cydoniae*, p. 410, *rubra*, p. 411, *parva*, p. 413, *rosea*, p. 414, *ingæ*, p. 415, Brazil, HEMPEL, t. c., n. spp.
- Targionia*, monograph, with subg. n. *Froggattiella* for *Aspidiotus inusitatus*, Green, LEONARDI, pp. 298–320, Riv. Patol. Veg. viii.
- Tectococcus* n. g. *Coccinae*, for *T. ovatus* n. sp., Brazil, HEMPEL, p. 406, Revist. Mus. Paulista iv.
- Tectopulvinaria* n. g. *Lecaniinae*, p. 482, for *T. albata* n. sp., Brazil, p. 483, HEMPEL, t. c.
- Walkeriana pertinax*, Zomba, NEWSTEAD, p. 947, pl. lix, P. Zool. Soc. London 1900, n. sp.
- Websteriella* subg. n. cf. *Parlatoria*.
- Xerophilaspis parkinsoniae*, Arizona, COCKERELL, p. 131, Canad. Ent. xxxii, n. sp.
- Xylococcus quercus*, California, EHRHORN, p. 311, Canad. Ent. xxxii, n. sp.

## ANOPLURA.

Clinical bibliography, HUBER (618).

*Hematopinus columbianus*, N. America on *Spermophilus columbianus*, OSBORN, p. 215, Canad. Ent. xxxii, n. sp.

(F.) NEUROPTERA.

TRICHOPTERA.

- [Cf. BANKS (63, 64, 264), FABRE (385), Klapálek (734), Lameere (794), MORTON (928).]
- Agrypnetes curvata*, Minnesota, BANKS, p. 252, Tr. Amer. ent. Soc. xxvi, n. sp.
- Apatania tripunctata*, Alaska, BANKS, p. 472, P. Washington Ac. ii, n. sp.
- Asynarchus simplex*, p. 469, *fumosus*, *flavicollis*, p. 470, *alascensis*, p. 471, Alaska, BANKS, t. c.; *A. centralis*, p. 253, *tristis*, p. 254, N. America, BANKS, Tr. Amer. ent. Soc. xxvi : n. spp.
- Chetopterygopsis appfelbecki*, Bosnia, Klapálek, p. 676, Wiss. Mitt. Bosnien vii; *C. parvula*, N. America, BANKS, p. 256, Tr. Amer. ent. Soc. xxvi : n. spp.
- Drusus bosnicus*, Bosnia, Klapálek, p. 674, Wiss. Mitt. Bosnien vii, n. sp.
- Glossosoma alascensis*, Alaska, BANKS, p. 472, P. Washington Ac. ii, n. sp.
- Halesus? alascensis*, Alaska, BANKS, p. 471, t. c.; *H. formosus*, Colorado, BANKS, p. 255, Tr. Amer. ent. Soc. xxvi : n. spp.
- Heteroplectron nigripennis*, p. 256, *mexicanum*, p. 257, N. America, BANKS, t. c. n. spp.
- Homophylax* n. g. *Limnophilides*, for *H. flavipennis* n. sp., Colorado, BANKS, p. 255, t. c.
- Hydropsyche nervosa*, Sarajevo, Klapálek, p. 678, Wiss. Mitt. Bosnien vii; *H. occidentalis*, *grandis*, N. America, BANKS, p. 258, Tr. Amer. ent. Soc. xxvi, n. spp.
- Leptocella minuta*, Washington, BANKS, p. 257, t. c. n. sp.
- Leptophylax* n. g. for *L. gracilis* n. sp., Minnesota, BANKS, p. 252, t. c.
- Limnophilus flavicornis*, case-making, FABRE (385).
- L. harrimani*, *kincaidi*, Alaska, BANKS, p. 468, P. Washington Ac. ii; *L. americanus*, *consimilis*, N. America, BANKS, p. 253, Tr. Amer. ent. Soc. xxvi; *L. cockerelli*, New Mexico alpine, BANKS, p. 124, Psyche ix : n. spp.
- Notidobia americana*, Virginia, BANKS, p. 256, Tr. Amer. ent. Soc. xxvi, n. sp.
- Oecetina guttata*, New Jersey, BANKS, p. 257, t. c. n. sp.
- Philopotamus barrettæ*, Mexico, BANKS, p. 259, t. c. n. sp.
- Polycentropus variegatus*, Washington, BANKS, p. 259, t. c. n. sp.
- Potamorites virginica*, N. America, BANKS, p. 256, t. c. n. sp.
- Potamyia* n. g. type *Macronema flava* Hag., BANKS, p. 259, t. c.
- Rhyacophila lanceolata*, p. 2, *tecta*, p. 4, *curvata*, *scissa*, p. 5, *anatina*, *naviculata*, p. 6, *inconspicua*, p. 7, *India*, *japonica*, p. 3, *articulata*, p. 5, Japan, MORTON, Tr. ent. Soc. London 1900; *R. mexicana*, Vera Cruz, BANKS, p. 259, Tr. Amer. ent. Soc. xxvi : n. spp.
- Stenophylax pallidus*, Bosnia, Klapálek, p. 673, Wiss. Mitt. Bosnien vii; *S. pacificus*, *antennatus*, Washington, BANKS, p. 254, Tr. Amer. ent. Soc. xxvi : n. spp.
- Trienodes borealis*, Minnesota, *flavescens*, New Brunswick, BANKS - t. c. n. spp.

## NEUROPTERA-PLANIPENNIA.

[Cf. BANKS (63, 67), KIRBY (721, 725), KOLBE (749), LAMEERE (794), McLACHLAN (876), MOFFAT (915).]

*Chasmatoptera* n. g. for *Nemoptera huttii* Westw., KIRBY, p. 462, Ann. Nat. Hist. vi.

*Chrysopa*; eggs parasitised, MOFFAT (915); *C.* spp., Java, natural history, ZEHNTNER, pp. 13–18, pl. ii, figg. 28–33, Plantenluizen x.

*Formicaleo morpheus*, Christmas Is., KIRBY, p. 140, pl. xiv, fig. 3, Monogr. Christmas Island, n. sp.

*Halter bettoni*, E. Africa, KIRBY, p. 460, Ann. Nat. Hist. vi, n. sp.

*Hemerobius*: notes on Scottish, MORTON, pp. 30–32, Ann. Scott. Nat. Hist. 1900.

*Leucochrysa mexicana*, Vera Cruz, BANKS, p. 251, Tr. Amer. ent. Soc. xxvi, n. sp.

*Mantispa mimetica*, Borneo, McLACHLAN, p. 127, Ent. Mag. xxxvi, n. sp.

*Myrmecoleon* and *Formicaleo* near Berlin, REY, Berlin. ent. Zeitschr. xlv, SB. p. 49.

*Myrmoleon iridescens*, Christmas Is., KIRBY, p. 140, pl. xiv, fig. 4, Monogr. Christmas Island; *M. texanum*, Galveston, BANKS, p. 596, Ent. News Philad. xi : n. spp.

*Nemopteridæ*; Synonymical Catalogue, KIRBY, Ann. Nat. Hist. vi, pp. 456–464.

*Nemoptera remipennis*, Lake Nyassa, p. 13, *togonica*, W. Africa, p. 14, *biremis*, S. Africa, p. 16, KOLBE, SB. Ges. naturf. Berlin 1900, n. spp.

*Osmylus* sp., Java, natural history, ZEHNTNER, pp. 18–20, pl. i, figg. 7–10, Plantenluizen x.

*Palpares papilionides* var., *P. walkeri* ♀, McLACHLAN, p. 34, P. Zool. Soc. London 1900.

*Panorpa signifer*, Michigan, BANKS, p. 251, Tr. Amer. ent. Soc. xxvi, n. sp.

## PSEUDO-NEUROPTERA.

## MALLOPHAGA.

*Colpocephalum petulum*, Alaska, on *Arenaria interpres*, KELLOGG & KUWANA, p. 157, pl. vii, fig. 4, P. Ac. Philad. 1900, n. sp.

*Docophorus alaskensis*, Alaska, on *Rhodostethia rosea*, KELLOGG & KUWANA, p. 151, pl. vii, fig. 1, t. c. n. sp.

*Lipeurus macilhennyi*, Alaska, on *Diomedea nigripes*, KELLOGG & KUWANA, t. c. p. 155, pl. vii, fig. 3, n. sp.

*Menopon corporosum*, Alaska, on *Crymophilus fulicarius*, KELLOGG & KUWANA, p. 158, pl. vii, fig. 3, t. c. n. sp.

*Nirmus infectus*, Alaska, on *Crymophilus fulicarius*, KELLOGG & KUWANA, p. 153, pl. vii, fig. 2, t. c. n. sp.

## PSOCIDÆ.

[Cf. BANKS (63, 65, 66), ENDERLEIN (377, 378), LAMEERE (794), McLACHLAN (877), RIBAGA (1110–1113).]

Brachypterous females, McLACHLAN (877).

Variation of wing-nervures, McLACHLAN, p. 14, Ent. Mag. xxxvi.

Internal anatomy of *Trichopsocus dalii*, RIBAGA (1112).

The *Psocidæ* of Italy: list of 38 species with notes, RIBAGA, Riv. Patol. Veg. viii, pp. 375–386.

- Amphigerontia bicolor*, p. 144, pl. ix, fig. 9, *cinctipes*, fig. 10, *hemiphæoptera*, fig. 11, p. 145, with var. *hyalina*, p. 146, ENDERLEIN, Zool. Jahrb. Syst. xiv, n. spp.
- Bertkaia prisci* in England, McLACHLAN, pp. 220, 221, Ent. Mag. xxxvi.
- Ectopsocus berlesii*, Italy, RIBAGA, p. 364, Riv. Patol. Veg. viii, n. sp.
- Elipsocus viridimicans*, Peru, ENDERLEIN, p. 155, pl. ix, fig. 22, Zool. Jahrb. Syst. xiv, n. sp.
- Epipsocus*; characters, comparison of living and amber species, ENDERLEIN, pp. 108-110, Berlin. ent. Zeitschr. xlv.
- E. nepos*, Peru, ENDERLEIN, p. 111, t. c. figures, pl. ix, figg. 15, 16, p. 150, Zool. Jahrb. Syst. xiv, n. sp.
- Graphocæcilus* n. g. *Cæciliini*, p. 155, for *G. trypetoides* n. sp., Peru, p. 156, pl. ix, fig. 23, ENDERLEIN, t. c.
- Ischnopteryx* n. g. *Thyrsopterini*, for *I. calacoroides* n. sp., Peru, pl. viii, fig. 2, ENDERLEIN, p. 139, t. c.
- Neopsocus callanganus*, Peru, ENDERLEIN, p. 147, pl. ix, fig. 12, t. c. n. sp.
- Neurostigma* n. g. *Peripsocini*, p. 157, for *N. chaetocephalum* n. sp., Peru, p. 158, pl. ix, fig. 24, ENDERLEIN, t. c.
- Polypsocus lunulatus*, Peru, ENDERLEIN, p. 154, pl. ix, fig. 21, t. c. n. sp.
- Psocathropos* n. g., p. 156, for *P. lachlani* n. sp., Italy, p. 157, pl. vii, RIBAGA, Riv. Patol. Veg. viii.
- Psocinella* n. g. near *Dorypteryx*, p. 431, for *P. slosonæ* n. sp., Florida, p. 432, BANKS, Ent. News Philad. xi.
- Psocus oregonus*, *virginianus*, N. America, *barretti*, Mexico, BANKS, p. 239, Tr. Amer. ent. Soc. xxvi; *P. ochraceocristatus*, pl. viii, fig. 13, with var. *conjungens*, Peru, ENDERLEIN, p. 146, Zool. Jahrb. Syst. xiv : n. spp.
- Ptiloneura* n. g., p. 147, *Cæciliini*, for *P. bidorsalis* with var. *octoplumosa* n. sp., Peru, p. 149, pl. ix, fig. 14, ENDERLEIN, t. c.
- Ptilopsocus* n. g. *Cæciliini*, p. 150, for *P. fuscus*, pl. ix, fig. 17, *desectus*, fig. 18, p. 151, *quadriguttatus*, fig. 19, *griseolineatus*, fig. 20, p. 152, n. spp., Peru, ENDERLEIN, t. c.
- Teratopsocus maculipennis* a brachypterous form of *Graphopsocus cruciatus*, McLACHLAN, Ent. Mag. xxxvi, p. 6.
- Thyrsophorus metallicus*, Peru, ENDERLEIN, p. 138, pl. viii, fig. 1, Zool. Jahrb. Syst. xiv, n. sp.
- Thyrsoopsocus* n. g., p. 140, for *T. peruanus*, p. 141, pl. viii, fig. 3, *psocoides*, p. 143, with varr. *pedunculata*, fig. 7, *duplopostica*, fig. 8, p. 144, n. spp., Peru, ENDERLEIN, t. c.; *T. bellus* (Macf.) var. n. *fuscognatus*, ENDERLEIN, p. 142, pl. viii, fig. 4, t. c.
- Troctes bicolor*, p. 559, *niger*, p. 60, N. America, BANKS, Ent. News Philad. xi, n. spp.

## TERMITIDÆ.

- [Cf. ERRINGTON (379), FAIRCHILD & COOK (388), GOUNELLE (515), HEYMONS (591), KNOWER (738), SJÖSTEDT (1221), WASMANN (1070, 1378).]
- Monograph of African *Termitidæ*, 82 species, SJÖSTEDT, Svenska Ak. Handl. xxxiv, No. 4. We mention below only the new species given in this important article: it deals with 82 species, and includes a bibliography of Termitid literature from other parts of the world supplementary to that of Hagen.
- Embryology, KNOWER (738), HEYMONS (591).
- Production of sound, GOUNELLE (515).
- Note on habits of *Termes carbonarius*, ERRINGTON (379).
- The structure of a termitarium sp.?, in India, RODON, p. 363, J. Bombay Soc. xiii.



Termites and fungi, HOLTERMANN (598).

W. African Termites and their fungi, FAIRCHILD & COOK (388).

*Coleoptera* frequenting termitaria in S. Africa, PÉRINGUEY, pp. 66–68, Ann. Soc. ent. France lxi.

Termitophilous *Diptera* in S. Africa, WASMANN (1378).

*Acanthotermes* n. g., p. 54, for *Termes militaris* Hag., etc., SJÖSTEDT, Svenska Ak. Handl. xxxiv, No. 4.

*Calotermes camerunensis* (= *robustus* Sjöst. 1897), p. 39, *havilandi* (= *domesticus* Sjöst. nec Hav.), p. 43, Africa, SJÖSTEDT, t. c. n. spp.

*Coptotermes raffrayi*, Swan River, WASMANN, p. 244, P. Linn. Soc. N. S. Wales xxv, n. sp.

*Eutermes trinervius*, nests, habits, CLEMENTS, pp. 86–88, Tr. Manchester Micr. Soc. 1899.

*Hodotermes wasmanni*, N. Africa, SJÖSTEDT, p. 33, Svenska Ak. Handl. xxxiv, No. 4, n. sp.

*Termes angustipennis*, p. 115, Africa, SJÖSTEDT, t. c. n. sp.

### EMBIIDÆ.

*Embia æthiopicorum*, W. Africa, KARSCH, p. 79, Ent. Nachr. xxvi, n. sp.

### PERLIDÆ.

[Cf. BANKS (63), KEMPNY (688, 689), LAMEERE (794).]

The tribes and classification of *Perlidae*, BANKS, p. 240, Tr. Amer. ent. Soc. xxvi.

The *Perlidae* of Norway, 25 species, KEMPNY (688).

*Acroneuria pacifica*, Washington, BANKS, p. 242, Tr. Amer. ent. Soc. xxvi, n. sp.

*Capnura* n. g. for *C. venosa*, n. sp., Washington, BANKS, p. 245, t. c.

*Chloroperla*; the sexual characters, KEMPNY, pp. 91, 92, Verh. Ges. Wien l. C. *strandii*, Norway, id. t. c., p. 93; *C. minuta*, Ohio, BANKS, p. 244, Tr. Amer. ent. Soc. xxvi: n. spp.

*Dictyopteryx norvegica*, Norway, KEMPNY, p. 86, Verh. Ges. Wien l; *D. irregularis*, Washington, BANKS, p. 243, Tr. Amer. ent. Soc. xxvi: n. spp.

*Isogetus nubecula*?, description, with provisional name *rectus*, KEMPNY, p. 88, Verh. Ges. Wien l.

*I. nanseni*, Norway, id. p. 90, t. c. n. sp.

*Leuctra handlirschi* var. *n. teriolensis*, p. 256, *L. inermis* var. of *handlirschi*, p. 257, KEMPNY, Verh. Ges. Wien l.

*L. rosinae*, Tyrol, KEMPNY, p. 257, t. c. n. sp.

*Nemura marginata* Kemp. and *præcox* Mort. are the same, KEMPNY, p. 258, t. c.

*N. stigmata*, Winnipeg, BANKS, p. 244, Tr. Amer. ent. Soc. xxvi, n. sp.

*Perla sabulosa*, p. 242, *americana*, p. 243, N. America, BANKS, t. c. n. spp.

*Perlinella* n. g. type *Perla trivittata* Banks, BANKS, p. 242, t. c.

*Pteronarcella* n. g. type *Pteronarcys regularis* Hag., BANKS, p. 242, t. c.

*Tæniopteryx pacifica, occidentalis*, Washington, BANKS, p. 244, t. c. n. spp.

### EPHEMERIDÆ.

[Cf. BANKS (63), CIACCIO (259), LAMEERE (794), MOCSÁRY (913).]

Classification of *Ephemeridæ* and tabulation of genera, BANKS, pp. 245–247, Tr. Amer. ent. Soc. xxvi.

- Leptophlebia basalis*, N. America, BANKS, p. 248, t. c. n. sp.  
*Callibaetis floridanus, californicus*, p. 249, *americanus, coloradensis*, p. 250,  
*pallidus*, p. 251, N. America, BANKS, t. c. n. spp.

## ODONATA.

- [Cf. EAST (366), FOERSTER (431, 432), KARSCH (672), KIRBY (717, 718, 719), LAMEERE (794), LUCAS (833, 834), McLACHLAN (878), RIS (1119), RÖSSLER (1133), SJÖSTEDT (1222), THERESE VON BAYERN (1317), TOUGH (1327), TüMPPEL (1337), WILLIAMSON (1417).]

*Odonata* of Slavonia and Dalmatia, RÖSSLER (1133).

*Odonata* from Cameroons, 46 spp., 14 new, SJÖSTEDT (1222); descriptions and synonymy are given for many of the species: below we record only the novelties.

Notes on 33 species found by Kükenthal in the Malay Archipelago, KARSCH, Abh. Senckenb. Ges. xxv, pp. 211-230.

List of genera of Australian *Odonata*, BILLINGHURST, pp. 5-10, Victorian Natural. xvii.

Notes on nymphs from the Bismarck Arch., *Tramea rosenbergi* etc., RIS, pp. 201-203.

The first moult, CALVERT, p. 350, Entomologist xxxiii.

Nymphs living out of water, EAST, pp. 211, 212, t. c.

Notes on respiration of nymphs, EAST (366).

*Odonata* eaten by birds, MOORE, p. 340, Ent. News Philad. xi.

TüMPPEL (1337) completed.

Synonymy of old English literature, LUCAS (834).

Synonymy of old British works, LUCAS, Entomologist xxxiii, fere passim.

*Aeshna thomassoni*, Hainan, KIRBY, p. 534, Ann. Nat. Hist. xii, n. sp.

*Agrion (Cænagrion) holdereri*, Centr. Asia, FOERSTER, p. 264, pl. iii, figg. 1-4, Wien. ent. Zeit. xix, n. sp.

*Agrionoptera*; character of the allied genera, KARSCH, pp. 221-230, Abh. Senckenb. Ges. xxv; two species only, RIS, pp. 182, 183, Arch. Naturg. lxvi.

*Anatya spuria, theresia*, Colombia, SELYS, p. 264, and 260, pl. iii, figg. 3, 4, Berlin. ent. Zeitschr. xlv, n. spp.

*Anax selysii*, New Guinea, FÖRSTER, p. 88, Termes. Fuzetek xxiii, n. sp.

*Apeleutherus* n. g. near *Thermorthemis*, p. 73, for *A. strachani*, n. sp., Sierra Leone, p. 74, pl. ii, fig. 4, KIRBY, Ann. Nat. Hist. vi.

*Argioenemus martini*, Bismarck Arch., RIS, p. 199, Arch. Naturg. lxvi, n. sp.

*Beblecia* n. g. near *Trithemis* for *B. adolescens* n. sp., Sierra Leone, KIRBY, p. 71, Ann. Nat. Hist. vi.

*Camacinia harmandi*, Sikkim, MARTIN, p. 103, Bull. Mus. Paris 1900, n. sp.

*Cænagrion glaucum*, Cameroons, SJÖSTEDT, p. 61, Bih. Svenska Ak. xxv, no. 2, n. sp.

*Cratilla* n. g. for *Orthemis metallica* Brauer, KIRBY, p. 542, Ann. Nat. Hist. v.

*Enallagma cyathigerum* var. figg. McLACHLAN, p. 111, Ent. Mag. xxvi; *E. annexum, caloerti*, distinguished, WILLIAMSON, p. 455, pl. ix, Ent. News Philad. xi.

*E. anna*, N. America, WILLIAMSON, p. 455, pl. ix, figg. 1, 2, t. c., n. sp.

*Epitheca bimaculata*, habits, FRÖHLICH, pp. 379-382, Ent. Nachr. xxvi.

*Gomphus cornutus*, Illinois, TOUGH, p. 17, Mem. Chicago ent. Soc. i, n. sp.

*Gyracantha*, validity discussed, p. 91, *G. rosenbergi*, characters, p. 101, FÖRSTER, Termes. Fuzetek xxiii.

*G. similima*, New Guinea, FÖRSTER, p. 98, t. c., n. sp.

*Hylæchna* n. g., *Allopetalia*, for *H. paludis* n. sp., Cameroons, p. 40, Bih. Svenska Ak. xxv, no. 2.

- Karschia* n. g. near *Gynacantha*, p. 91, for *K. cornuta*, p. 94, *angulata*, p. 96, n. spp., New Guinea, FÖRSTER, Termes. Fuzetek xxiii; *Karschia* is synonym of *Gynacantha*, KARSCH, p. 213, with note on classification of subfam. *Libellulinae*, p. 217, Abh. Senckenb. Ges. xxv.
- Lestes sponsa*, nymph, LUCAS, p. 142, Entomologist xxxiii.
- Leucorrhinia dubia*, migration, IMMS, p. 189, Ent. Mag. xxxvi.
- Libellago glaucifrons*, p. 51, *neptunus*, p. 54, *camerunensis*, p. 56, *grandis*, p. 58, Cameroons, SJÖSTEDT, Bih. Svenska Ak. xxv, no. 2, n. spp.
- Libellula quadrimaculata*, migrations, McLACHLAN (878); *L. quadrimaculata* swarm in England, LUCAS (833); swarm in Antwerp, Ent. Nachr. xxvi, p. 253.
- Macromia selysi*, Sierra Leone, KIRBY, p. 77, Ann. Nat. Hist. vi; *M. terpsichore*, New Guinea, FÖRSTER, p. 86, Termes. Fuzetek xxiii : n. spp.
- Mesothemis mithroides*, Colombia, BRAUER, p. 266, cut p. 261, pl. iii, fig. 5, Berlin. ent. Zeitschr. xlv, n. sp.
- Micrathyria septima*, SELYS, p. 265, pl. iii, fig. 6, Berlin. ent. Zeitschr. xlv, n. sp.
- Monocloptera* n. g. near *Agrionoptera*, p. 228, for *M. kukenthalii*, n. sp. Borneo, p. 229, KARSCH, Abh. Senckenb. Ges. xxv.
- Nannophlebia imitans*, Bismarck Arch., RIS, p. 189, Arch. Naturg. lxvi, n. sp.
- Neophlebia camerunensis*, W. Africa, SJÖSTEDT, p. 36, Bih. Svenska Ak. xxv No. 2, n. sp.
- Nesocordulia rubricauda*, Madagascar, MARTIN, p. 108, Bull. Mus. Paris 1900, n. sp.
- Nesoxenia* listed, RIS, p. 181, Arch. Naturg. lxvi.
- Neurocena* n. g. for *Zygonyx ida* Hag., KIRBY, p. 541, Ann. Nat. Hist. v.
- Neurothemis oculata* var., RIS, p. 178–180, Arch. Naturg. lxvi.
- Orthetrum julia*, Sierra Leone, KIRBY, p. 75, pl. ii, fig. 3, Ann. Nat. Hist. vi, n. sp.
- Perithemis intensa* var. n. *californica*, MARTIN, p. 104, Bull. Mus. Paris 1900.
- Phaon camerunensis*, W. Africa, SJÖSTEDT, Bih. Svenska Ak. xxv No. 2, p. 48, n. sp.
- Phyllogomphus ethiops* ♂ described, MARTIN, p. 105, Bull. Mus. Paris 1900.
- Platycnemis pennipes*, nymph, LUCAS, p. 142, Entomologist xxxiii; variation due to age, BENTIVOGLIO, p. 91, Atti Soc. Modena xxxiii.
- Pseudagrion flavipes*, Cameroons, SJÖSTEDT, Bih. Svenska Ak. xvi No. 2, p. 59, n. sp.
- Pseudolestes*, n. g., aberrant, p. 537, for *P. mirabilis* n. sp., Hainan, p. 538, pl. xii, fig. 4, KIRBY, Ann. Nat. Hist. v.
- Pseudomacromia* and allies: *P. speciosa* etc., indicated as n. g., SJÖSTEDT, pp. 26–28, Bih. Svenska Ak. xxv No. 2.
- P. hova*, Madagascar, p. 105, *natulensis*, Natal, *viridescens*, Madagascar, p. 106, *atlantica* (Selys) Canaries, p. 107, MARTIN, Bull. Mus. Paris 1900, n. spp.
- Pseudophæa decorata*? figure, pl. xii, fig. 2, p. 536, KIRBY, Ann. Nat. Hist. v.
- Rhinocypha fulgidipennis*, note, McLACHLAN, p. 114, Ent. Mag. xxxvi.
- R. whiteheadi*, Hainan, KIRBY, p. 536, pl. xii, fig. 4, Ann. Nat. Hist. v, n. sp.
- Rhyothemis*; the valid species, RIS, pp. 177, 178, Arch. Naturg. lxvi.
- Schizonyx*; is valid, characters, KIRBY, Ann. Nat. Hist. v, p. 541.
- Schizothemis* n. g., p. 23, near *Pseudomacromia*, for *S. flavicosta* n. sp., Cameroons, p. 24, SJÖSTEDT, Bih. Svenska Ak. xxv No. 2.
- Selysioneura* n. g. near *Protoneura* for *S. cervicornu* n. sp., New Guinea, FÖRSTER, p. 106, Termes. Fuzetek xxiii.

- Sympetrum striolatum* var., LUCAS, p. 139, pl. iv, nymph, p. 142, Entomologist xxxiii; *S. flaveolum* var., McLACHLAN, p. 209, Ent. Mag. xxxvi.
- Sympycna annulata* race *gobica*, p. 258, pl. iii, fig. 7, *S. fusca* in Wallis, p. 261, pl. iii, fig. 5, FÖRSTER, Wien. ent. Zeit. xix.
- Tachopteryx thoreyi*, note on, WILLIAMSON, p. 398, Ent. News Philad. xi.
- Tetrathemis biroï*, p. 82, *braueri*, p. 85, New Guinea, FÖRSTER, Termes. Fuzetek xxiii, n. spp.
- Thaumatoneura inopinata*, habitat Panama not Asia, McLACHLAN, p. 189, Ent. Mag. xxxvi.
- Thermochoria picta*, Cameroons, SJÖSTEDT, p. 21, Bih. Svenska Ak. xxv No. 2, n. sp.
- Thermothemis austeni*, Sierra Leone, p. 72, pl. ii, fig. 1, *monteiroi*, Angola, p. 73, KIRBY, Ann. Nat. Hist. vi.
- Tragogomphus* n. g. *Gomphidæ* near *Neurogomphus*, for *T. aurivillii* n. sp., Cameroons, SJÖSTEDT, Bih. Svenska Ak. xxv No. 2.
- Tramea rosenbergi* varr., RIS, p. 176, Arch. Naturg. lxvi.
- Trithemis trivialis*, generic position discussed, KIRBY, p. 531, Ann. Nat. Hist. v.
- T. kalula*, pl. ii, fig. 2, *serra*, Sierra Leone, KIRBY, p. 69, Ann. Nat. Hist. vi; *T. violacea*, Cameroons, SJÖSTEDT, p. 13, Bih. Svenska Ak. xxv No. 2 : n. spp.
- Umma fuscomarginis*, Cameroons, SJÖSTEDT, Bih. Svenska Ak. xxv No. 2, p. 45, n. sp.
- Wahnesia* n. g. for part of *Argiolestes*, p. 105, and *W. kirbyi*, *montivagans* n. spp. not described, FÖRSTER, Termes. Fuzetek xxiii.
- Zygonidia* n. g. near *Zygonyx*, p. 532, for *Z. insignis*, n. sp., Hainan, p. 533, pl. xii, fig. 1, KIRBY, Ann. Nat. Hist. v.
- Zygonyx*; allies discussed, KIRBY, pp. 539-542, Ann. Nat. Hist. v.

## THYSANOPTERA.

*Thrips* attacking leguminous plants, THEOBALD (1315).

(G.) *APTERA.*

## THYSANURA.

[Cf. GIARDINA (505), LÉCAILLON (804, 805), SILVESTRI (1216), SKORIKOW (1227, 1229).]

Ovaries and oogenesis, *Campodea*, LÉCAILLON (804).

Ovaries and oogenesis in *Machilis maritima*, LÉCAILLON (805).

Scales of *Thysanura* and *Collembola*, BRYAN, pp. 152-4, Sci. Gossip vii.

*Japyx dux*, Buchara, SKORIKOW, p. 320, pl. vii, Annuaire Mus. St Petersburg, v, n. sp.

*Machilis*; development of pattern, pp. 242, 243 and 257-259, natural history, egg, pp. 259, 260, GIARDINA, Illustr. Zeitschr. Ent. v; *M. maritima*, habits, IMMS, p. 188, Ent. Mag. xxxvi.

*M. kleinenbergi*, p. 209, *grassii*, p. 210, *aureus*, p. 227, *sicula*, p. 228, with var. *minuscola*, p. 229, Sicily, GIARDINA, Illustr. Zeitschr. Ent. v, n. spp.

*Projapyx styliifer*, in Argentina, SILVESTRI (1216).

## COLLEMBOLA.

[Cf. ABSOLON (5-10), BÖRNER (154), FOLSOM (433), HARVEY (567), LIE-PETERSEN (822), PLATEAU (1043), PROWAZEK (1058), SCHÄFFER (1150), SKORIKOW (1226, 1228, 1229), WAHLGREN (1361-1363), WILLEM (1415, 1416).]

Arctic *Collembola*, Jan Mayen and East Greenland, WAHLGREN (1361).

Spitzbergen *Collembola* with historical and distributional notes and tables, and remarks on characters, 10 species, SKORIKOW, Annuaire Mus. St. Petersburg, v, pp. 190-209, plate and map.

*Collembola* from Franz-Josef Land, 7 species, CARPENTER, P. Dublin Soc. ix, pp. 271-278, cuts.

The geographical distribution of European *Collembola*, SKORIKOW (1229).

Embryology and morphology of *Collembola*, especially *Isotoma*, PROWAZEK (1058).

The development of the mouth-parts of *Anurida*, FOLSOM (433).

Food-habits of *Collembola*; copula of *Sminthurus*, LIE-PETERSEN (822).

An overlooked paper by Koch (1840) with genera *Paidium* and *Blax* in Fürnrohr's Regensburg etc., McLACHLAN, p. 244, Ent. Mag. xxxvi.

*Achorutes dubius* var. n. *concolor*, CARPENTER, p. 272, P. Dublin Soc. ix; *A. sigillatus* var. *stygius* n. var., ABSOLON, p. 268, Zool. Anz. xxiii.

*A. affinis*, *carolinæ*, Germany, SCHÄFFER, p. 250, Jahresh. Ver. Württemb. lvi; *A. tigrina*, N. America, HARVEY, p. 552, Ent. News Philad. xi : n. spp.

*Aphorura octopunctata* var. n. *edenticulata*, WAHLGREN, p. 357, Ofv. Ak. Forh. lvii; *A. armata* var. n. *multipunctata*, *stalagmutorum*, p. 406, *A. sibirica*, characters, p. 409, ABSOLON, Zool. Anz. xxiii.

- A. spelæa*, Moravia, ABSOLON, p. 411, Zool. Anz. xxiii; *A. paradoxa*, p. 246, *hamanni*, p. 248, Germany, *folsomi* = (*inermis* Fols.) p. 249, SCHÄFFER, Jahresh. Ver. Württemb. lvi : n. spp.
- Entomobrya arborea* var. n. *obscura*, p. 262, *E. corticalis* var. n. *pallida*, p. 263, SCHÄFFER, Jahresh. Ver. Württemb. lvi.
- E. lonnbergi*, Volga, WAHLGREN, p. 847, Ofv. Ak. Forh. lvi; *E. (Sinella) agilis*, N. America, HARVEY, p. 549, pl. xv, fig. 2 : n. spp.
- Eusminthurus* subg. n., cf. *Sminthurus*.
- Heteromurus* Wank. = (*Templetonia* Lubb.), ABSOLON, p. 192, Zool. Anz. xxiii.
- Isotoma stagnalis* with var. *tenebricola*, Belgium, WILLEM, p. 28, Ann. Soc. ent. Belgique xlv; *I. janmayensis*, Jan Mayen, WAHLGREN, p. 354, Ofv. Ak. Forh. lvii; *I. brevicauda*, Franz-Josef Land, CARPENTER, p. 274, P. Dublin Soc. ix; *I. pusilla*, p. 254, *muscorum*, p. 255, *neglecta*, p. 258, Germany, SCHÄFFER, Jahresh. Ver. Württemb. lvii; *I. parallela*, Patagonia, WAHLGREN, p. 268, Ent. Tidskr. xxi : n. spp.
- Megalothorax* n. g. *Sminthurides*, for *M. minimus* n. sp., Gaud, WILLEM, p. 7, plate, Ann. Soc. ent. Belgique xlv.
- Mesochorutes*, n. g. *Poduridæ*, p. 266, for *M. 4-ocellatus* n. sp., Moravian caves, p. 267, ABSOLON, Zool. Anz. xxiii.
- Neanura patagonica*, Patagonia, WAHLGREN, p. 269, Ent. Tidskr. xxi, n. sp.
- Papirius fuscus* var. n. *cavernicola*, SCHÄFFER, p. 277, Jahresh. Ver. Württemb. lvi.
- Polyacanthella* redefined, WAHLGREN, p. 370, Ofv. Ak. Forh. lvii.
- P. quinquespinosa*, Greenland, WAHLGREN, p. 368, t. c. n. sp.
- Schafferia* n. g. *Poduridæ*, p. 265, for *S. emucronata* n. sp., Moravian caves, p. 266, ABSOLON, Zool. Anz. xxiii.
- Sira* (*Sirodes* subg. n.) *lamperti*, Germany, SCHÄFFER, p. 270, Jahresh. Ver. Württemb. lvi, n. sp.
- Sirodes* subg. n., cf. *Sira*.
- Sminthuridæ*: classification, division into *Sminthurini* and *Megalothoracini*, BÖRNER, Zool. Anz. xxiii, pp. 609, 610.
- Sminthurides* subg. n., cf. *Sminthurus*.
- Sminthurus*: tabulation of German species, with varr. n.; *Eusminthurus* n. subg., p. 611, *Sminthurides*, n. subg., p. 616, BÖRNER, Zool. Anz. xxiii; *S. viridis caucasicus* n. var., KARSCH, p. 303, Ent. Nachr. xxvi.
- S. albus*, Germany, SCHÄFFER, p. 277, Jahresh. Ver. Württemb. lvi; *S. brunneus*, N. America, HARVEY, p. 550, pl. xv, fig. 6 : n. spp.
- Stenaphorura* n. g., p. 411, for *S. japygiformis* n. sp., Moravia, p. 412, ABSOLON, Zool. Anz. xxiii.
- Tomocerura* n. g., p. 265, for *T. picta* n. sp., Patagonia, p. 266, WAHLGREN, Ent. Tidskr. xxi.
- Tomocerus*; table of species, SKORIKOW, pp. 477-480, Annuaire Mus. St. Petersb. iv.
- T. lubbocki*, Germany, SCHÄFFER, p. 273, Jahresh. Ver. Württemb. lvi; *E. baschkiricus*, cavern, Orenburg, SKORIKOW, p. 473, pl. xxi, Annuaire Mus. St. Petersb. iv : n. spp.
- Tullbergia arctica*, Jan Mayen, WAHLGREN, p. 359, Ofv. Ak. Forh. lvii, n. sp.
- Typhlopodura* n. g. *Entomobryides*, for *T. longicornis* n. sp., Caves in Herzegowina, ABSOLON, p. 428, Zool. Anz. xxiii, cf. *Verhoeffiella*.
- Verhoeffiella* subg. n. of *Typhlopodura*, p. 429, for *V. cavicola* n. sp., Herzegowina, p. 430, ABSOLON, t. c.

## (H.) ORTHOPTERA.

The classification of *Orthoptera*, DOMINIQUE (343).

The orthopterologically natural divisions of Europe, BURR (202).

France, tables of *Orthoptera* of, HOULBERT (610).

*Orthoptera* of Sweden, AURIVILLIUS (47).

Handbuch to the *Orthoptera* of Germany and Austria-Hungary, REDTENBACHER (1077).

Catalogue of N. American, 856 species, SCUDDER (1176).

List of New England *Orthoptera*, SCUDDER & HENSHAW (1182).

Nervous system, especially œsophageal ganglia, BORDAS (147).

## FORFICULIDÆ.

[Cf. BORELLI (151), BORMANS (152), BORMANS & KRAUSS (153), BURR (197, 198, 199), DISTANT (320), HEYMONS (588), KIRBY (725), SCUDDER (1182).]

Synopsis of *Forficulidæ*, DE BORMANS (153).

Habits and peculiarities, geography, DISTANT, *Ins. transvaal* i, p. 1-12.

Mode of folding wings, MOORE & BURR, pp. 78, 79, *Ent. Rec.* xii.

*Ancistrogaster inopinata*, Costa Rica, p. 85, *intermedia*, Peru, p. 87, BURR, *Ann. Nat. Hist.* vi, n. spp.

*Anechura ahrimanes*, Sikkim, BURR, p. 79, pl. iv, fig. 5, t. c. n. sp.

*A. hermes*, Sarawak, p. 99, pl. iv, fig. 1, BURR, t. c. n. sp.

*Anisolabis litorea*, eggs and early stages of development, HEYMONS (588).

*A. piligera*, Sumatra, BORMANS, p. 453, *Ann. Mus. Genova* xl, n. sp.

*Apterygida mackinderi*, E. Africa, BURR, p. 83, pl. iv, fig. 3, *Ann. Nat. Hist.* vi, n. sp.

*Carcinophora cœruleipennis* n. n. for *femoralis* Dubr., BORMANS, *Das Tierreich* xi, p. 40.

*Chaetospania parvula*, p. 93, *jupiter*, p. 94, Sarawak, BURR, *Ann. Nat. Hist.* vi, n. spp.

*Chelisoches ater* n. n. for *australica* Dubr. nec Guillou, BORMANS, p. 85, *Das Tierreich* xi.

*C. beelzebub*, India, BURR, p. 51, *Ann. Soc. ent. Belgique* xlv; *C. vario-pictus*, Mentawai Ids., p. 462, *doriæ*, Borneo, p. 463, *elegans*, Sumatra, p. 464, BORMANS, *Ann. Mus. Genova* xl; *C. shelfordi*, p. 96, pl. iv, fig. 4, *hercules*, p. 97, fig. 2, Sarawak, BURR, *Ann. Nat. Hist.* vi : n. spp.

*Echinosoma sekulavum*, Madagascar, BORMANS, p. 441, *Ann. Mus. Genova* xl; *E. ? obscurum*, Pretoria, KIRBY, in Distant, *Ins. transvaal* p. 12, pl. i, fig. 2 : n. spp.

*Forcipula congo*, W. Africa, BURR, p. 49, *Ann. Soc. ent. Belgique* xlv; *F. gariuzzi*, Congo, BORELLI, *Boll. Mus. Torino* xv, No. 381; *F. americana*, p. 443, Bolivia, *decolyi*, New Guinea, p. 444, BORMANS, *Ann. Mus. Genova* xl : n. spp.

- Forficula auricularia*, food, KIRKALDY, p. 87, Entomologist xxxiii; *F. auricularia* in bee-hives, BUYSSON, p. 183, Bull. Soc. ent. France 1900.
- F. orientalis*, Constantinople, BURR, p. 82, pl. iv, fig. 7, Ann. Nat. Hist. vi; *F. ? ares*, Sarawak, BURR, p. 100, pl. iv, fig. 6, t. c. : n. spp.
- Gonolabis* n. g. type *Anisolabis javana*, BURR, pp. 48 & 53, Ann. Soc. ent. Belgique xlv.
- G. peringueyi*, S. Africa, p. 451, *sumatrana*, Sumatra, p. 452, BORMANS, Ann. Mus. Genova xl, n. spp.
- Labia murrayi*, ♂, pl. xii, fig. 6, ♀, pl. xiii, fig. 5, p. 143, *incerta*, pl. xii, fig. 5, *indistincta*, fig. 4, *L. ? subarmata*, fig. 7, p. 144, Christmas Is., KIRBY, Monogr. Christmas Island; *L. aculeata*, p. 456, *hilaris*, p. 457, *papua*, p. 458, New Guinea, BORMANS, Ann. Mus. Genova xl; *L. severini*, Colombia, BURR, p. 50, Ann. Soc. ent. Belgique xlv : n. spp.
- Labidura nigricornis*, pl. xii, fig. 2 ♂, fig. 3 ♀, p. 142, KIRBY, Monogr. Christmas Island.
- L. inconspicua*, Pretoria, KIRBY, p. 13, pl. i, fig. 1, Distant, Ins. transvaal; *L. tenuicornis*, N. Guinea, BORMANS, p. 446, Ann. Mus. Genova xl : n. spp.
- Mecomera modiglianii*, Mentawai Ids., BORMANS, p. 460, t. c. n. sp.
- Opisthocosmia cannes*, Assam, BURR, p. 85, Ann. Nat. Hist. vi; *O. rebus*, Java, BURR, p. 53, Ann. Soc. ent. Belgique xlv; *O. beccarii*, Sumatra, BORMANS, p. 465, Ann. Mus. Genova xl : n. spp.
- Platylabia sparattoides*, Pulo, Penang, BORMANS, t. c. n. sp.
- Psalis indica* var. n. *minor*, BORMANS, p. 447, t. c.
- P. guttata*, Mentawai Ids., p. 448, *scudderi*, Paraguay, p. 449, BORMANS, t. c. n. spp.
- Sphingolabis insularis*, Pemba Is., KIRBY, p. 13, pl. i, fig. 3, Distant, Ins. transvaal. n. sp.
- Spongiphora nitidipennis*, ♂, dimensions, BORMANS, p. 455, Ann. Mus. Genova xl.
- S. rubriceps*, p. 89, *sphinx*, p. 91, Borneo, BURR, Ann. Nat. Hist. vi; *S. stella*, Mentawai Ids., BORMANS, p. 454, Ann. Mus. Genova xl : n. spp.
- Sparatta setulosa*, Sarawak, BURR, p. 92, Ann. Nat. Hist. vi, n. sp.
- Strongylopsalis* n. g. near *Carcinophora*, p. 80, for *S. inca* n. sp., Peru, p. 81, BURR, t. c.

## HEMIMERIDÆ.

Synopsis of *Hemimeridæ*, KRAUSS, Das Tierreich Lief. ii.

## BLATTIDÆ.

[Cf. ANNANDALE (32, 33), DISTANT (320), DOMINIQUE (345), KIRBY (321), PETRUNKEWITSCH (994), SCUDDER (1182), WHEELER (1412).]

Habits of *Blattidæ*; *Blattidæ* of the Transvaal, DISTANT (320). The species described by Kirby, as below, are figured on pl. i of this work. Aquatic *Blattidæ*, ANNANDALE (32, 33).

Parasites of the eggs, SURVEYOR (1296).

Alimentary canal and digestion, PETRUNKEWITSCH (994).

*Aphlebia transvaalensis*, p. 278, *bicolor*, p. 279, S. Africa, KIRBY, Ann. Nat. Hist. v, n. spp.

*Apotrogia* n. g., *Blattides*, for *A. angolensis* n. sp., Africa, KIRBY, p. 281. t. c.



- Attaphila* n. g. for *A. fungicola* n. sp., Texas, with *Atta fervens*, WHEELER, Amer. Natural. xxxiv, p. 860.
- Derocalymma bipapilla*, p. 291, *intermedia*, *pallipes*, p. 292, *clavigera*, p. 293, S. Africa, KIRBY, Ann. Nat. Hist. v, n. spp.
- Deropeltis distant*, Pretoria, KIRBY, p. 284, t. c. n. sp.
- Elliptoblatta uniformis*, S. Africa, KIRBY, p. 288, t. c. n. sp.
- Eustegasta obsoleta*, S. Africa, KIRBY, p. 287, t. c.; *E. luerci*, Congo, DOMINIQUE, p. 204, pl. iii, figg. 14–18, Bull. Soc. Ouest France x : n. spp.
- Hormetica advena*, Massachusetts, SCUDDER, p. 94, P. Davenport Ac. viii, n. sp.
- Loboptera americana*, Arizona, SCUDDER, p. 93, pl. ii, fig. 4, t. c.; *L.* corrected characters, SCUDDER, p. 329, Canad. Ent. xxxii : n. sp.
- Nauphoeta aspersata*, Pretoria, KIRBY, p. 285, Ann. Nat. Hist. v, n. sp.
- Pelmatorilpha rotundata*, Texas, Panama, SCUDDER, p. 93, pl. ii, fig. 5, P. Davenport Ac. viii, n. sp.
- Pilema saussurei*, Pretoria, KIRBY, p. 289, Ann. Nat. Hist. v, n. sp.
- Phyllodromia delta*, *ruficeps*, S. Africa, KIRBY, p. 280, t. c. n. spp.
- Pronaonota cribrosa*, male, KIRBY, p. 288, t. c.
- Stenopilema pallicornis*, Pretoria, KIRBY, p. 290, t. c. n. sp.

## MANTIDÆ.

- [Cf. ANNANDALE (32), KIRBY (725), REHN (1088), SJÖSTEDT (1223), SLINGERLAND (1232).]
- Flower-like *Mantidæ*, attitude and habits, ANNANDALE (32).
- Emergence from Ootheca of *Ameles spallanzanii*, GIARDINA, p. 280, Illustr. Zeitschr. Ent. v.
- Charlieis* n. g. *Orthoderidæ*, p. 36, for *C. peeli* n. sp., Somaliland, p. 37, pl. ii, fig. 4, BURR, P. Zool. Soc. London 1900.
- Clidnoptera lunata* Sauss., SJÖSTEDT, p. 20, pl. fig. 6, Bih. Svenska Ak. xxv No. 6.
- Hierodula dispar*, Christmas Is., KIRBY, p. 146, Monogr. Christmas Island, n. sp.
- Idolomorpha sagitta*, W. Africa, SJÖSTEDT, Bih. Svenska Ak. xxv No. 6, p. 25, n. sp.
- Macrodanuria* n. g. *Vatidæ*, p. 22, for *M. phasmoides* n. sp., W. Africa, p. 23, pl. figg. 1, 2, SJÖSTEDT, t. c.
- Mantis religiosa*, habits, STICHEL, Berlin. ent. Zeitschr. xlv, SB., p. 4; abundance at Reims, etc., BELLEVOYE, p. 71, Feuille Natural. xxxi; *M. religiosa* in N. America, SLINGERLAND (1232) and SCUDDER, p. 119, Psyche ix.
- Miomantis lutescens*, W. Africa, SJÖSTEDT, Bih. Svenska Ak. xxv No. 6, p. 15, n. sp.
- Polyspilota picta* to *Hierodula*, ♀ described, SJÖSTEDT, t. c. p. 13.
- Tarachodes maculisternum*, W. Africa, SJÖSTEDT, p. 6, t. c. n. sp.
- Theopompa aurivillii*, p. 3, *angusticollis*, p. 5, W. Africa, SJÖSTEDT, t. c. n. spp.
- Vates annectens*, Mexico, REHN, p. 85, Tr. Amer. ent. Soc. xxvii, n. sp.

## PHASMIDÆ.

- [Cf. BRUNNER (983), CHURCHEVILLE (258), KIRBY (725), REHN (1088), SINÉTY (1217–1220), SJÖSTEDT (1223).]
- Malpighian tubes structure and function, SINÉTY (1219).
- Testis and ovary, SINÉTY (1220).

- Parthenogenesis and Thelytochy in *Leptynia*, SINÉTY (1217).  
 Moults of *Leptynia*, SINÉTY (1218).  
*Anisomorpha borellii*, young and adult, GIGLIO-TOS, Boll. Mus. Torino No. 377, p. 2.  
*Bacillus gallicus*, habits, parthenogenesis, CHURCHEVILLE, Miscell. ent. viii, pp. 3-6; *B. gallicus* in Normandy, LETACQ, Bull. Soc. Rouen xxxv, p. 157.  
*Bacteria tridens* ♀, REHN, p. 87, Tr. Amer. ent. Soc. xxvii.  
*Buctridium clinteria* ♀ and young, GIGLIO-TOS, Boll. Mus. Torino No. 377, p. 2.  
*Bacunculus tenuescens*, Florida, SCUDDER, p. 95, pl. i, fig. 1, Davenport Ac. viii, n. sp.  
*Burria* n. g. *Clitumnidæ*, p. 37, for *B. longixipha*, pl. ii, fig. 6, *farinosa*, n. spp., Somaliland, p. 38, BRUNNER, P. Zool. Soc. London 1900.  
*Clitumnus stilpnoides*, pl. xii, fig. 1, p. 147, KIRBY, Monogr. Christmas Island.  
*Sermyle strigata*, Texas, SCUDDER, p. 94, pl. i, fig. 3, P. Davenport Ac. viii, n. sp.

## ORTHOPTERA SALTATORIA.

- [Cf. AZAM (49), BERG (101), BLATCHLEY (126), BOLIVAR (133, 134), BORDAGE (139-142), BORDAS (147, 149, 150), BRUNNER (186, 187), BURR (196, 200-203, 983), DOMINIQUE (345), FROGGATT (463), GIARDINA (506), GIGLIO-TOS (507), GODMAN (511), HANCOCK (550-553), HOULBERT (610), HUNTER & SUTTON (629), HUTTON (632), KARSCH (677), KIRBY (720, 722, 725), KRAUSS (782), KÜNCKEL (789), LUCAS (835), M'CLUNG (879), McNEIL (880-882), REHN (1088), ROSSINSKY (1132), SCUDDER (1176-1185), SJÖSTEDT (1223), SUTTON (1297), THERESE VON BAYERN (1317), VANEY & CONTE (1351), WHEELER (1413), ZUBOWSKY (1431).]

## GRYLLIDÆ.

- Anatomy of *Brachytrupes achatinus*, peculiar Malpighian tubes, BORDAS (149, 150).  
 Alimentary canal of *Brachytrupes achatinus*, BORDAS (149).  
 The tunnels and nest of *Gryllotalpa*, ROSSINSKY (1132).  
*Arachnopsis dubius*, S. India, BOLIVAR, p. 803, Ann. Soc. ent. France lxxviii, n. sp.  
*Cophogryllus martini*, S. India, BOLIVAR, p. 798, t. c. n. sp.  
*Cori. cogryllus* n. g. near *Aphasius*, p. 807, for *C. abbreviatus* n. sp., S. India, p. 808, BOLIVAR, t. c.  
*Ertatoderus flavipalpis*, Christmas Is., KIRBY, p. 147, pl. xiii, figg. 3, 4, Monogr. Christmas Island, n. sp.  
*Gnoblemmus flavipes*, W. Africa, SJÖSTEDT, p. 32, Bih. Svenska Ak. xxv No. 6, n. sp.  
*Gryllodes viridus*, W. Africa, SJÖSTEDT, p. 29, t. c.; *G. virgulatus*, p. 797, subopacus, p. 798, S. India, BOLIVAR, Ann. Soc. ent. France lxxviii : n. spp.  
*Gryllotalpa vulgaris*, adaptation of foot; the foot of young, VANEY & CONTE (1351); nest, ROSSINSKY (1132).  
*Gryllus quadrimaculatus* var. n. *apicalis*, BOLIVAR, p. 796, Ann. Soc. ent. France lxxviii.  
*Homaloblemmus indicus*, S. India, BOLIVAR, p. 800, t. c. n. sp.  
*Landrevus hemipterus*, S. India, BOLIVAR, p. 800, t. c. n. sp.

- Liphoplus guerini*, S. India, BOLIVAR, p. 801, pl. xii, fig. 25, t. c. n. sp.  
*Myrmecophila nebrascensis*, relations with ants, male, WHEELER (1413).  
*Nemobius camerunensis*, W. Africa, SJÖSTEDT, p. 27, Bih. Svenska Ak. xxv No. 6; *N. monomorphus*, S. India, BOLIVAR, p. 794, Ann. Soc. ent. France lxviii; *N. maculatus*, p. 52, *palustris*, *exiguus*, p. 53, Indiana, BLATCHLEY, Psyche ix : n. spp.  
*Patiscus quadripunctatus*, S. India, BOLIVAR, p. 806, Ann. Soc. ent. France lxviii, n. sp.  
*Pseudonemobius pictus*, ♂ characters, BOLIVAR, p. 793, t. c.  
*Pteroplistus platycleis*, S. India, BOLIVAR, p. 802, pl. xii, fig. 26, t. c., n. sp.  
*Scapsipedus orientalis*, with var. *bilineatus*, India, BOLIVAR, p. 799, t. c., n. sp.  
*Tridactylus castetsi*, S. India, BOLIVAR, p. 792, t. c. n. sp.  
*Trigonidium gigas*, S. India, BOLIVAR, p. 804, t. c. n. sp.

## LOCUSTIDÆ.

- Locustidæ* from Southern India, BOLIVAR (133).  
*Acrodonia*; characters amended, p. 777, BOLIVAR, Ann. Soc. ent. France lxviii.  
*A. nigrospinosa*, S. India, id. p. 778, t. c. n. sp.  
*Anchiptolis atrifrons*, S. America, GIGLIO-TOS, Boll. Mus. Torino No. 377, p. 7, n. sp.  
*Antaxius flozei*, Spain, BOLIVAR, p. 20, Ann. Sci. nat. Porto vi, n. sp.  
*Aprion suspectus* ♂, BOLIVAR, p. 775, Ann. Soc. ent. France lxviii.  
*Arethaea consuetipes*, California, SCUDDER, p. 332, Canad. Ent. xxxii, n. sp.  
*Ateolus notatus*, California, SCUDDER, p. 98, pl. ii, fig. 3, P. Davenport Ac. viii, n. sp.  
*Capnobotes imperfectus*, Mexico, REHN, p. 89, Tr. Amer. ent. Soc. xxvii, n. sp.  
*Capnoptera* sp., attitude and habits, ANNANDALE, p. 854, P. Zool. Soc. London 1900.  
*Climacoptera superba*, S. India, BOLIVAR, p. 773, Ann. Soc. ent. France lxviii, n. sp.  
*Clinopteleura flavomarginata*, California, SCUDDER, p. 332, Canad. Ent. xxxii, n. sp.  
*Cosmoderus erinaceus* var. *n. congolensis*, DOMINIQUE, p. 208, pl. iii, figg. 1-10, Bull. Soc. Ovest France x.  
*Decolya* n. g. near *Teuthras*, p. 782, for *D. visenda* n. sp., S. India, p. 783, pl. xii, fig. 20, BOLIVAR, Ann. Soc. ent. France lxviii.  
*Deinacrida parva* and *broughi* referred to *Hemideina*, the latter = (*ricia* Hutt.), HUTTON, p. 21, Tr. N. Zealand Inst. xxxii.  
*Dichopetala brevicauda*, California, SCUDDER, p. 331, Canad. Ent. xxxii, n. sp.  
*Elimæa nigrosignata*, S. India, BOLIVAR, p. 762, Ann. Soc. ent. France lxviii, n. sp.  
*Engoniaspis testacea*, Missouri?, SCUDDER, p. 96, P. Davenport Ac. viii, n. sp.  
*Eremopedes unicolor*, Arizona, SCUDDER, p. 97, pl. ii, fig. 1, t. c. n. sp.  
*Eremus elegantulus*, *decolyi*, S. India, BOLIVAR, p. 790, Ann. Soc. ent. France lxviii, n. spp.  
*Gampsocleis glabra* var. *n. assoi*, BOLIVAR, p. 13, Ann. Sci. nat. Porto vi.  
*Gryllacris rufovarva*, p. 148, pl. xiv, fig. 1, KIRBY, Monogr. Christmas Island.  
*G. bertrandi*, p. 786, *punteli*, p. 788, *succinea*, p. 789, S. India, BOLIVAR, Ann. Soc. ent. France lxviii, n. spp.  
*Hormilia elegans*, New Mexico, SCUDDER, p. 96, P. Davenport Ac. viii, n. sp.

- Hypocophus indicus*, S. India, BOLIVAR, p. 786, Ann. Soc. ent. France lxviii, n. sp.
- Idionotus brunneus*, California, SCUDDER, p. 98, pl. ii, fig. 2, P. Davenport Ac. viii, n. sp.
- Lissotrachelus maoricus*, characters, HUTTON, p. 19, Tr. N. Zealand Inst. xxxii, n. sp.
- Magrettia obscura*, Somaliland, BURR, p. 45, P. Zool. Soc. London 1900, n. sp.
- Milititsa* n. g. *Terpnistriarum*, p. 42, for *M. somaliensis* n. sp., Somaliland, pl. ii, figg. 5, 7, p. 43, BURR, t. c.
- Neanias pupulus*, S. India, BOLIVAR, p. 789, Ann. Soc. ent. France lxviii, n. sp.
- Nicephora* n. g. *Meconemideæ*, p. 770, for *N. trigonidioides*, p. 771, *subulata*, p. 772, pl. xi, fig. 15, *mazerani*, *mirabilis*, p. 773, n. spp., S. India, BOLIVAR, t. c.
- Niphella* n. g. near *Himerta*, p. 763, for *N. pulchra* n. sp., S. India, p. 764, pl. x, fig. 10, BOLIVAR, t. c.
- Odonturella* subg. n. of *Odontura*, for *aspericauda* Ramb., BOLIVAR, p. 7, Ann. Sci. nat. Porto vi.
- Orchelimum*; the genus valid, table of species, synonymy, MACNEILL, Canad. Ent. xxxii, pp. 77-83.
- Oryctopus*; characters, pp. 783-785, *O. bolivari*, sexes, p. 785, BOLIVAR, Ann. Soc. ent. France lxviii.
- O. prodigiosus*, S. India, id. p. 785, pl. xii, fig. 21, t. c. n. sp.
- Otiaphysa angustipennis*, Somaliland, BURR, p. 43, pl. ii, fig. 2, P. Zool. Soc. London 1900, n. sp.
- Oxylakis truncutipennis*, S. India, BOLIVAR, p. 778, Ann. Soc. ent. France lxviii, n. sp.
- Oxystethus pulcher*, S. India, BOLIVAR, p. 776, t. c. n. sp.
- Phanoptera punctulata*, Somaliland, BURR, p. 41, P. Zool. Soc. London 1900; *P. subcarinata*, S. India, BOLIVAR, p. 764, Ann. Soc. ent. France lxviii : n. spp.
- Phis listeri*, pl. xiii, fig. 6, p. 149, KIRBY, Monogr. Christmas Island.
- Phyllominus nodulosus*, S. India, BOLIVAR, p. 774, Ann. Soc. ent. France lxviii, n. sp.
- Pleiopectron cavernæ*, N. Zealand, HUTTON, p. 21, Tr. N. Zealand Inst. xxxii = (*Pachyrhamma edwardsii* Brunn.), n. sp.
- Pleminia argentina*, Buenos Aires, BERG, p. 264, Comun. Mus. Buenos Aires i, n. sp.
- Psyra pomona*, Christmas Is., KIRBY, p. 150; Monogr. Christmas Island, n. sp.
- Pterolepis spoliata* var. n. *minor*, BOLIVAR, p. 14, Ann. Sci. nat. Porto vi.
- P. cordubensis*, Spain, id. l. c. n. sp.
- Pycnogaster finoti* var. n. *gaditanus*, BOLIVAR, p. 4, t. c.
- Pyrgophylax spathulatus*, S. India, BOLIVAR, p. 764, Ann. Soc. ent. France lxviii, n. sp.
- Rhegmatoptoda peeli*, Somaliland, BURR, p. 44, pl. ii, fig. 1, P. Zool. Soc. London 1900, n. sp.
- Scirtobænus lusitanicus*, Portugal, BOLIVAR, p. 16, Ann. Sci. nat. Porto vi, n. sp.
- Stipator* n. n. for *Orchesticus* Sauss. nec Cab., REHN, p. 90, Tr. Amer. ent. Soc. xxvii.
- Thaumaspis* n. g. near *Meconema*, p. 768, for *T. trigonurus*, *forcipatus*, p. 769, *longipes*, p. 770, n. spp., S. India, BOLIVAR, Ann. Soc. ent. France lxviii.
- Thyreonotus corsicus* var. n. *montana*, BOLIVAR, p. 16, Ann. Sci. nat. Porto vi.
- Trigonocorypha crenulata* ♂, BOLIVAR, p. 767, Ann. Soc. ent. France lxviii.

- Turpilia ambigua*, S. India, BOLIVAR, p. 765, t. c. n. sp.  
*Tylopsis perpulchra*, Somaliland, BURR, p. 43, P. Zool. Soc. London 1900;  
*T. punctulata, rubrescens*, Zomba, KIRBY, p. 216, Ann. Nat. Hist. vi :  
 n. spp.  
*Udenus* n. g. near *Heteromallus*, p. 112, for *U. w-nigrum* n. sp., Patagonia,  
 p. 113, BRUNNER, Ann. Soc. ent. Belgique xlv.  
*Xyphidiopsis militaris*, p. 781, *forcata*, p. 782, S. India, BOLIVAR, Ann.  
 Soc. ent. France lxviii, n. spp.  
*Xiphidium dorsale*, macropterous form, BURR, p. v, P. ent. Soc. London  
 1900; *X. dorsale* var., HARWOOD, p. 128, BURR, p. 129, Ent. Rec. xii.  
*X. somali*, Somaliland, BURR, p. 45, P. Zool. Soc. London 1900; *X.*  
*honorei*, p. 779, *bivittatum*, p. 780, S. India, BOLIVAR, Ann. Soc. ent.  
 France lxviii : n. spp.  
*Xiphiola borellii*, S. America, GIGLIO-TOS, Boll. Mus. Torino No. 377,  
 p. 5, n. sp.

## ACRIDIDÆ.

- Study of variation in wing-nervures of *Trimerotropis*, MCNEIL (880).  
 Cycles of coloration in *Schistocerca*, KÜNCKEL (789).  
 Problematic organ —? luminous — in ♀ *Pacilocerus socotranus*, KRAUSS  
 (782).  
 Ootheca and use of armature of female, GIARDINA (506).  
 Destructive locusts of Australia, FROGGATT (463).  
*Abila bolivari*, S. America, GIGLIO-TOS, Boll. Mus. Torino No. 377, p. 4,  
 n. sp.  
*Agonozoa* subg. n. of *Trimerotropis*, MCNEILL, Psyche ix, p. 27.  
*Arcyptera kheili*, France, AZAM, p. 82, Bull. Soc. ent. France 1900, n. sp.  
*Bryodema gebleri* var. n. *mongolica*, ZUBOWSKY, p. 17, Horæ Soc. ent. Ross.  
 xxxiv.  
*Catantops solitarius*, p. 280, *decipiens*, p. 281, E. Africa, KARSCH, Ent.  
 Nachr. xxvi, n. spp.  
*Chiriguia* n. g. *Tettiginae*, p. 6, for *C. serrata* n. sp., Central America, p. 7,  
 MORSE, Biol. Centr.-Amer. Orthopt. ii.  
*Circotettix*; table of the species, synonymy, distribution, SCUDDER, Psyche  
 ix, pp. 135-141.  
*Clematodes* n. g. between *Aleuxæ* and *Vilernæ*, p. 213, for *C. larree* n. sp.,  
 New Mexico, p. 214, SCUDDER, J. N. York Ent. Soc. viii.  
*Conophyma fedtschenkoi*, Turkestan, ZUBOWSKY, p. 23, Horæ Soc. ent. Ross.  
 xxxiv, n. sp.  
*Criotettix acutipennis*, E. Africa, KARSCH, p. 285, Ent. Nachr. xxvi, n. sp.  
*Cryptotettix* n. g. *Tettigideæ*, p. 13, for *C. spinilobus* n. sp., Madagascar,  
 p. 14, pl. i, fig. 6, HANCOCK, Mem. Chicago ent. Soc. i.  
*Cyrtacanthacris wingatei*, China, KIRBY, p. 381, Ann. Nat. Hist. vi, n. sp.  
*Derotema laticinctum*, p. 389, *delicatulum*, p. 390, *suassureanum*, p. 391,  
*lentiginosum*, p. 393, *lichenosum*, p. 394 (but identified as *Edipoda*  
*gracilis* Thom. p. 395), N. America, SCUDDER, P. Amer. Ac. xxxv.  
 n. spp.  
*Epacromia terminalis*, FROGGATT (463); *E. rufostriata*, pl. xiii, fig. 2,  
 p. 152, KIRBY, Monogr. Christmas Island.  
*Eumastacideæ*; notes on geographical distribution, BURR, pp. 161, 162,  
 Ent. Rec. xii.  
*Euryphymus cuspidatus*, E. Africa, KARSCH, p. 282, Ent. Nachr. xxvi,  
 n. sp.  
*Gomphocerus palpalis*, Siberia, ZUBOWSKY, p. 13, Horæ Soc. ent. Ross.  
 xxxiv, n. sp.

- Hadrotettix mundus*, California, p. 68, *nebulosus*, Mexico, p. 69, SCUDDER, Psyche ix, n. spp.
- Heliasius minimus*, California, SCUDDER, p. 46, t. c. n. sp.
- Herius* subg. n., cf. *Syrbula*.
- Hybotettix* n. g. *Tettigideæ*, p. 8, for *H. humeralis* n. sp., Madagascar, p. 9, pl. i, fig. 4, HANCOCK, Mem. Chicago ent. Soc. i.
- Humbe* and *Humbella*, synonymy and species, KARSCH, p. 276, Ent. Nachr. xxvi.
- Lactista inermis*, Mexico, REHN, p. 96, Tr. Amer. ent. Soc. xxvii, n. sp.
- Leprus elephas* (= *corpulentus* Scudd.), SCUDDER, p. 75, Psyche ix.
- L. glaucipennis*, California, id. p. 76, t. c. n. sp.
- Leptyma marginicollis*, distribution, var., SCUDDER, p. 116, t. c.
- Melanoplus*; characters of spp. found in Kansas, HUNTER & SUTTON (629); *M. differentialis*, habitat, REHN, p. 28, Canad. Ent. xxxii.
- M. cockerelli*, p. 124, *sapellanus*, p. 125, New Mexico alpine, SCUDDER, Psyche ix, n. spp.
- Mestobregma rosaceum*, p. 91, *hyalinum*, p. 92, California, SCUDDER, t. c. n. spp.
- Metrodora magistralis*, Colombia, BRUNNER, p. 254, pl. iii, fig. 1, Berlin. ent. Zeitschr. xlv, n. sp.
- Microtes* n. g. near *Spharagemon*, p. 329, for *M. nubila* n. sp., California, p. 330, SCUDDER, Canad. Ent. xxxii.
- Notocerus* n. g. *Tettigideæ*, p. 5, for *N. cornutus* n. sp., Madagascar, p. 6, pl. i, fig. 2, HANCOCK, Mem. Chicago ent. Soc. i.
- Ochetotettix* n. g. for *Neotettix barretti*, and *O. volans* n. sp., Mexico, MORSE, p. 9, Biol. Centr.-Amer. Orthopt. ii.
- Edaleus instillatus*, Somaliland, BURR, p. 39, P. Zool. Soc. London 1900, n. sp.
- Orphulella aculeata*, p. 92, *neglecta*, p. 94, Mexico, REHN, Tr. Amer. ent. Soc. xxvii, n. spp.
- Otumba* n. g. *Tettiginæ*, for *O. scapularis* n. sp., Nicaragua, MORSE, p. 7, Biol. Centr.-Amer. Orthopt. ii.
- Oxynotus* n. g. *Tettigideæ*, p. 11, for *O. hastatus* n. sp., Madagascar, p. 12, pl. 1, fig. 3, HANCOCK, Mem. Chicago ent. Soc. i.
- Paracomaris* n. g. for *P. deceptor* (= *Duronis semicarinata* Karsch nec *Chrysochraon semicarinatus* Gerst.), KARSCH, p. 275, Ent. Nachr. xxvi.
- Paratettix durus, sinuatus*, Mexico, MORSE, p. 13, Biol. Centr.-Amer. Orthopt. ii, n. spp.
- Pareuprepocnemis cunctator*, Zanzibar, KARSCH, p. 283, Ent. Nachr. xxvi, n. sp.
- Paurotarsus* n. g. *Tettigides*, for *P. amazonus* n. sp., Manaos, HANCOCK, p. 42, Psyche ix.
- Platythorus* n. g. *Tettiginæ*, for *P. camurus* n. sp., Nicaragua, MORSE, p. 9, Biol. Centr.-Amer. Orthopt. ii.
- Plectronotus* n. g. *Tettiginæ*, for *P. scaber* n. sp., Costa Rica, MORSE, p. 14, t. c.
- Plectrotettix patriæ*, California?, SCUDDER, p. 95, pl. iii, fig. 2, P. Davenport Ac. viii, n. sp.
- Podisma kappeni*, Siberia, ZUBOWSKY, p. 20, Horæ Soc. ent. Ross. xxxiv, n. sp.
- Podismopsis* n. g. or subg. of *Chrysochraon*, for *P. altaica* n. sp., Altai, ZUBOWSKY, p. 2, t. c.
- Primnia orientalis* referred to *Oxya*, pl. xiii, fig. 1, pl. xiv, fig. 2, p. 160, KIRBY, Monogr. Christmas Island.
- Prionolopha brevipennis*, Paraguay, GIGLIO-TOS, Boll. Mus. Torino No. 377, p. 3, n. sp.
- Pterotiltus finoti*, Congo, DOMINIQUE, p. 207, pl. iii, figg. 11-1<sup>a</sup>
- Ouest France x, n. sp.

- Sauracris* n. g. *Coptacra*, p. 40, for *S. lacerta* n. sp., Somaliland, p. 41, pl. ii, fig. 3, BURR, P. Zool. Soc. London 1900.
- Schistocerca paranensis*, stages of coloration, KÜNCKEL (789).
- Stenobothrus cognatus* var. n. *fallax*, ZUBOWSKY, p. 7, Horæ Soc. ent. Ross. xxxiv.
- S. newskii*, Altai, ZUBOWSKY, p. 9, t. c. n. sp.
- Syrbula esclava*, p. 90, *S. (Herus* subg. n.) *valida*, p. 91, Mexico, REHN, Tr. Amer. ent. Soc. xxvii, n. spp.
- Telmattetix* n. g. *Tettigina*, HANCOCK, p. 7, Psyche ix; *T. burri*, Madagascar, BURR, p. 10, Mem. Chicago ent. Soc. i, n. sp.
- Tetrix depressior*, E. Africa, KARSCH, p. 286, Ent. Nachr. xxvi, n. sp.
- Tetticerus* n. g. *Tettigida*, p. 2, for *T. bigibbosus* n. sp., Madagascar, p. 3, pl. i, fig. 1, HANCOCK, Mem. Chicago ent. Soc. i.
- Tettigida*: the genera of Bolivar, KARSCH, pp. 284, 285, Ent. Nachr. xxvi; *Tettigina* of Central America, MORSE in Biol. Centr.-Amer. Orthopt. ii.
- Tettigidea bruneri*, Mexico, MORSE, p. 16, t. c.; *T. jalapa*, p. 25, *T. chichimeca australis* [? sp. n.], p. 26, Mexico, HANCOCK, Canad. Ent. xxxii : n. spp.
- Tettix quadriundulatus*, referred to *Neotettix*, discovered in Haiti, HANCOCK, p. 25, Canad. Ent. xxxii.
- T. convexus*, *T. tectus*, Mexico, MORSE, p. 10, Biol. Centr.-Amer. Orthopt. ii, n. spp.
- Trimerotropis gratioa*, California, SCUDDER, p. 330, Canad. Ent. xxxii; *T. hyalina*, *cristata*, *porrecta*, p. 28, *coquilletti*, p. 29, *tessellata*, *caliginosa*, *albescens*, *ferruginea*, p. 30, *campestris* (Br.), *bruneri*, *fascicula*, *præclara*, p. 31, *melanoptera*, *strenua*, *agrestis*, p. 32, *collaris*, *fratercula*, p. 33, *saxatilis*, *pilosa*, *nubila*, *conspersa*, *variegata*, p. 34, N. America, MCNEILL, Psyche ix : n. spp.
- Tristira* n. g. near *Stauronotus*, p. 235, for *T. bergi* n. sp., Argentina, p. 236 cut, BRUNNER, Comun. Mus. Buenos Aires i.
- Tylolettix* n. g. for *T. sinuatus* n. sp., Nicaragua, MORSE, p. 6, Biol. Centr.-Amer. Orthopt. ii.
- Vilerna reducta*, Colombia, BRUNNER, p. 256, pl. iii, fig. 2, Berlin. ent. Zeitschr. xlv, n. sp.

## XIV. ECHINODERMA.

BY

F. A. BATHER.

---

### CONTENTS.

	Page
Introduction . . . . .	3
Corrigenda in Previous Records . . . . .	11
I.—TITLES . . . . .	12
II.—BIOLOGY.	
A. Evolution.	
i General Principles . . . . .	42
ii Relations of Echinoderma . . . . .	43
iii Phylogenies of smaller groups . . . . .	43
B. Morphology.	
i Anatomy . . . . .	43
(This is divided into Classes a—h, as under IV, and each Class is subdivided as follows):—	
1. General Accounts.	
2. Symmetries.	
3. Homologies of Classes.	
4. Skeletal tissue or Stereom.	
5. Skeletal anatomy.	
6. Hydrocoel and associated cavities, Respiratory organs.	
7. Coelom and other Body-cavities and their Contents.	
8. Digestive system. Cuvierian organs.	
9. Nervous systems and sense-organs.	
10. Mesodermal tissues (exc. skeletal).	
11. Axial organ or Ovoid gland.	
12. Generative organs and gonads.	
ii Variation :—	
a. In form . . . . .	50
b. In form and surface-characters . . . . .	50
c. In colour . . . . .	50
d. Meristic (1 & 2) . . . . .	
e. Abnormalities . . . . .	



	Page
iii Secondary Sexual Characters :—	
a. Differences of Form or Structure . . . . .	51
b. Differences of colour . . . . .	51
c. Protection of young . . . . .	51
c. Physiology :—	
i General . . . . .	51
ii Circulation . . . . .	51
iii Respiration . . . . .	51
iv Alimentation and Digestion . . . . .	51
v Excretion and its Products . . . . .	51
vi Sensation . . . . .	52
vii Miscellaneous and Experimental . . . . .	52
d. Bionomics :—	
i General Accounts . . . . .	52
ii Special habits . . . . .	52
iii Habitat (in Classes a—h, as under IV) . . . . .	52
iv Feeding . . . . .	53
v Defence and Protection. (a. Active. b. Concealment. c. Protective coloration. d. Other protective adaptations) . . . . .	53
vi Locomotion . . . . .	53
vii Autotomy and Regeneration . . . . .	53
viii Parasites and Commensals (in Classes a—h, as under IV) . . . . .	53
ix Echinoderms as Food . . . . .	54
x Echinoderms as Geological Agents . . . . .	54
e. Miscellaneous :—	
i Research and Instruction (a. Preservation. b. Methods of research. c. Museum exhibits and Collections. d. Instruction) . . . . .	54
ii Economics . . . . .	55
iii Bibliography . . . . .	55
iv Historical, Popular notions . . . . .	55
f. Auxology :—	
i General principles . . . . .	56
ii General accounts . . . . .	56
iii Formation of Gonads . . . . .	56
iv Oviposition, Fertilisation, Segmentation . . . . .	56
v Larval stages . . . . .	56
vi Organogeny, 4-12, as under II, B, i. . . . .	57
vii Post-larval growth-stages . . . . .	58
viii Developmental mechanics and Experimental Embryology . . . . .	58
(Under each of the above a—h indicate Classes as under IV.)	

## III.—DISTRIBUTION.

A. Geographical :—	
i General . . . . .	60
ii Atlantic Ocean and adjacent Seas . . . . .	60
iii Indian Ocean and adjacent Seas . . . . .	61
iv Pacific Ocean and adjacent Seas . . . . .	62
v Arctic Ocean and adjacent Seas . . . . .	62
vi Antarctic Ocean and adjacent Seas . . . . .	63

	Page
B. Geological :—	
i General . . . . .	63
ii Cainozoic :—	
a. General . . . . .	63
b. Pleistocene . . . . .	63
c. Pleiocene . . . . .	64
d. Meiocene . . . . .	64
e. Oligocene . . . . .	65
f. Eocene . . . . .	65
iii Mesozoic :—	
a. General . . . . .	66
b. Cretaceous (1. Upper. 2. Lower) . . . . .	66
c. Jurassic (1. Upper. 2. Middle. 3. Lower) . . . . .	69
d. Lias (including Rhaetic) . . . . .	70
e. Trias . . . . .	71
iv Palæozoic :—	
a. General . . . . .	71
b. Permian . . . . .	71
c. Permo-Carboniferous . . . . .	71
d. Coal Measures . . . . .	71
e. Lower Carboniferous . . . . .	72
f. Devonian . . . . .	72
g. Silurian . . . . .	73
h. Ordovician . . . . .	74
k. Cambrian . . . . .	74
l. Pre-Cambrian (Vacant).	
IV.—SYSTEMATIC.	
A. Echinoderma, general . . . . .	74
B. Holothurioidea . . . . .	75
C. Echinoidea . . . . .	79
D. Asteroidea . . . . .	110
E. Ophiuroidea . . . . .	119
F. Crinoidea . . . . .	128
G. Cystidea and Edrioasteroidea . . . . .	147
H. Blastoidea . . . . .	151
K. Incertæ Sedis . . . . .	153

## • INTRODUCTION.

I. TITLES. The large size of the present Record of Echinoderma literature is due partly to a desire to clear up everything from the nineteenth century, or rather from the last decade of it. This has resulted in the discovery of 113 titles omitted from previous lists, namely 1888, 1; 1890, 2; 1891, 2; 1892, 2; 1893, 1; 1894, 1; 1895, 3; 1896, 16; 1897, 28; 1898, 18; 1899, 39. But the year 1900 has itself yielded 257 works, a far larger number than any previous year. Other publications of 1900, and a few of previous years, believed to deal with Echinoderms, are still unseen in spite of every effort, including direct personal appeals to authors and publishers. Notwithstanding these omissions, and the uncertainty as to the date of many papers, a literature is traceable from 1894 onward.

It is occasionally suggested that the growing bulk of the Record might be checked by ignoring the less important publications. But it is impossible for one man to decide which papers are or are not of value for each one of his fellow-workers. The function of a Record is to indicate the contents of the literature in such a way that each reader can himself decide whether or no he wishes to see any particular publication. The inclusion of a title or of an observation in the Record does not imply (as some users of the Record think) that the article is a good one or that the observation is correct; still less is the Recorder responsible for opinions and criticisms quoted from other writers. To enforce this point, the insertion of cautionary remarks in [ ] has been somewhat extended in the present volume, while a rather more judicial tone than usual has been adopted in this Introduction.

II. BIOLOGY. A. It is a pity that CUVÉNOT'S views on Echinoderm evolution (74) should have been buried in a short-lived serial inaccessible to most zoologists. There are few now who uphold the descent of all Echinoderms from Holothurians, still fewer who, in conjunction therewith, maintain the homologies of the calycinal system in all their rigour, and the well-considered expression of these opinions by so thorough an anatomist deserved the compliment of refutation. Assuredly they in no way harmonise with the complete scheme of race-history outlined by GREGORY & BATHER (19), in which the peculiarities of Echinoderm structure and development are attributed to the fixation of the *Dipleurula* ancestor by its pre-oral lobe, a stage in which the *Pelmatozoa* remained, while the Eleutherozoan classes independently reverted to a free mode of life, a probable link being furnished by the *Edrioasteroidea*. Though retaining the pelmatozoic ancestor, implied in the usual statements of the calycinal theory, these authors adduce the evidence of fossils against the view that the apical systems of the various Classes are homogenetic. Although some observations of LUDWIG on recent *Ophiuroidea* have shown the supposed apical system to be more pronounced in the young, yet both the anatomist HAMANN (148) and the palaeontologist STUART (325) deny its ancestral nature. There will of course be much dispute as to the correctness of various details in the history of the Phylum as given in the treatise (19) above referred to, but the attempt to give a complete phylogenetic classification of all genera, fossil and recent, was worth making.

The phylogeny of the *Pelmatozoa* was touched on in last year's Record (p. 5): we may now see what agreement there is concerning other Classes. GREGORY (19) lays great stress on the resemblance of *Ophiuroidea* to *Asteroidea*, to which HAMANN (148) replies that the Class is no more closely related to *Asteroidea* than it is to any other Class of Echinoderms. Some of the arguments most reiterated by GREGORY have been shown by his critics to be devoid of foundation, and there is no doubt but that the trend of evolution in the two Classes has been quite distinct and that no confusion need exist between their Neozoic representatives. At the same time, as insisted on by STUART (325), the Palaeozoic *Ophiuroidea* approach the *Asteroidea* in many important structural features; and HAMANN'S vehement assertions can scarcely be reconciled with GREGORY'S incontrovertible statement that both are eleutherozoic, actinogonidial, lysactinic, with ambulacral plates internal to the radial ambulacral vessels. As was to be expected, GREGORY has set aside the previous classifications of each of these Classes into a Palaeozoic and a Neozoic Order. The ancient *Asteroidea* are now distributed by him among the *Cryptozoonia* and *Phanerozoonia* of SLADEN, a mode of treatment also adopted by STUART; but there is a general opinion that these divisions are not satisfactory even for recent forms; much more careful work is needed on Palaeozoic genera before the true lines of separation can be established. The classification of *Ophiuroidea*, based on a previous one by BELL, is maintained by

GREGORY; and STUART, though he criticises GREGORY's nomenclature and certain details, accepts the essential features of it, which indeed were first enunciated by himself. The classification, however, is not truly phylogenetic and its divisions are not congruous with one another: the *Lysophiuræ* Greg. (= *Ophio-encrinasteriæ* Stuart) are a primitive assemblage from which are descended the older *Streptophiuræ* (= *Protophiuræ* Stuart); these in turn seem to have given rise to three branches—"the living *Streptophiuræ*" (not further classified by GREGORY), the *Zygophiuræ*, and the *Cladophiuræ* (= *Euryalida*). These facts are obscured by the establishment of four equivalent Orders. Mention of the living *Streptophiuræ* reminds one that VERRILL (341) has made Families for most of them, and has revised the Families of *Cladophiuræ* and *Zygophiuræ*, but he confines himself to living genera, especially those of the W. Atlantic, and lays down no principles of wider application. It is to be hoped that HAMANN, in his treatment of this difficult question, will pay due attention to the extinct forms: after the publication of "The *Echinoderma*" in LANKESTER's "Zoology" (19) no classification that omits the fossils can be considered as other than a trifling with the subject.

It is interesting to compare the classifications of the *Echinoidea* given by GREGORY (19) and LAMBERT (187). Apart from differences of opinion as to the limits of Families or the position of certain genera, the Orders of GREGORY are much the same as the Sub-orders of LAMBERT, being taken from DUNCAN & ZITTEL; but, as will be seen from a tabular statement, they are divided up differently:—

GREGORY	ORDERS or SUBORDERS	LAMBERT
	Cystocidaroida .....	Plagiocysta
Regularia	Bothriocidaroida	} Holostomata
Endobranchiata	Cidaroida	
	Melonitoida	
	Plesiocidaroida	
Regularia	Diademoida .....	Glyphostomata
Ectobranchiata		} Endocysta
	Gnathostomata (Zittel) .....	
Irregularia	Atelostomata (Zittel) .....	Exocysta
		} Atelostomata

There is here no essential discrepancy. The facts of structure are admitted, and, speaking broadly, it is agreed that the Orders form a linear evolutionary series. Consequently the various divisions represent merely grades of structure, not divergent branches, and the major lines can be drawn almost anywhere, as each author thinks best, without change in the fundamental arrangement. But no permutation will turn this into a representation of phylogenetic affinity. What must now be studied is the relation of species to species, and genus to genus, by which method alone can the true lines of descent be traced across the arbitrary and artificial barriers of the existing classifications.

B. Descending to details of Anatomy, we find no novelties under *Holothurioidea*. The elementary student of *Echinoidea* has a choice of three accounts of *Echinus esculentus*, each with its own good points (19, 59, & 75). The systematist should utilise HESSE's detailed description of the micro-structure of spines. The morphologist will find many interesting studies in the valuable memoir of LAMBERT (187) on early Mesozoic Echinoids, notably that on the coalescence of primary ambulacra, a process which he ascribes to the preponderating growth of a tubercle on one plate causing it to overlap adjacent plates; the coalescence is therefore not due to a lateral pressure resulting from the addition of fresh ambulacra at the apex, as supposed by LOVÉN & DUNCAN, but is a minor ph



caused by the superficial growth in thickness of the test. BEDFORD'S (25) highly important discovery in *Asthenosoma* of a deeper nerve-layer forming ganglia on each side of the radial peri-haemal canal, demands special notice, since the lamented death of the author has deprived us of the promised memoir, in which he would doubtless have emphasized the homology of this with the deeper paired radial nerves already known in the other Echinoderm Classes. The two parts of Bronn's *Klassen und Ordnungen d. Thierreichs* published during the year contain an excellent account of the anatomy and ontogeny of recent *Ophiuroidea* by HAMANN (148), while the morphologist cannot afford to neglect the notes on Palaeozoic *Ophiuroidea* and *Asteroidea* furnished by STUERTZ (325). APOSTOLIDÉS' (17) account of *Ophiothrix* contains statements that are remarkable in another sense.

Turning to *Pelmatozoa*, we find an admirable introduction to the anatomy of *Antedon* by CUÉNOT. This however is so specialised a form that the student may be glad of the description of a simple stalked Crinoid offered by BATHER (19), who also discusses the chief modifications to which that type is subject, and in the course of his systematic account introduces many new facts. A long-standing controversy as to the presence of pores in the anal tube of fistulate Crinoids has at last been settled, so far as certain *Dendrocrinoidea* are concerned, by the detailed figures and descriptions of SPRINGER (314). The same author (315) announces discoveries concerning *Uintacrinus* for which the evidence will be given in a detailed memoir (Aug. 1901). From investigation, by numerous refined methods, of the histology of the soft tissues connecting the brachials of *Antedon*, BOSSHARD (44) concludes that the dorsal fibre-masses are not muscular, as supposed by some recent writers, but purely elastic, and in continuity with the general stroma; the interarticular ligament is of the same nature, but more compact, and opposes the pull of the ventral muscles partly by contraction from extension, partly by resistance to compression, according as it lies dorsad or ventrad to the fulcral ridge; the cirri, though united only by fibres similar to the dorsal ligament of the arms, are capable of spontaneous though sluggish movements, a fact admittedly inconsistent with the ascription of a purely elastic nature to the fibres. The paper begins with a useful summary of our present knowledge of *Antedon*'s anatomy, gives a better description of the syzygy (pp. 78-81) applied according to the proposal of (21) *Zool. Rec.* 1897, but repeats the old confusion between dorso-central and centro-dorsal (p. 74).

RUSSO (292) claims to have observed the rudiment of the sexual cells in *Antedon* near the wall of the posterior interradius, far away from the rudiment of the axial organ, but in connection with a special sinus and lacuna. He homologises this with the arrangement in adult holothurians, and believes it to represent the Cystid stage of organisation. The relation of this embryonic rudiment to the gonads of adult crinoids is, however, not clear. Here it is convenient to mention a physiological observation of the same writer (293). He claims that the genital organs of Holothurians [strictly of 3 spp. of *Holothuria*], when the gonads are not mature, not merely excrete the katabolic products of other tissues, but are themselves a centre of renal activity. If this be more than a particular statement of the general fact that the amoeboid cells of Echinoderms carry effete products through the walls of all the organs [cf. CUÉNOT (75) under II, c, v], then it may be regarded as confirming the homology of the Holothurian gonoduct on the one hand with the primitive nephridial pore of the anterior coelom in the *Dipleurula*, and on the other hand with the axial organ of other Echinoderms, to which organ a renal function has been assigned by KOWALEWSKY and the SARASINS. RUSSO, however, denies any connection between the gonads and the axial organ of Echinoderms.

The accounts of *Cystidea*, *Edrioasteroidea*, and *Blastoidea* in BATHER (19) are almost entirely the result of original research, and are full of new observations. A detailed redescription of *Edrioaster buchananus*, BATHER (20) gives some of the facts on which the conclusions of the Treatise (19) as to the relations of the Class are based. The extra plate noticed by ROWLEY (291) in the anal interradius of a *Pentremites elongatus*, throws light on the similar but larger structure in *Nucleocrinus*. The structures figured by SCHLUETER (298) as arms of *Lodanella* are, if arms at all, those of a Crinoid not of a Cystid; the structure of the stereom resembles that of *Craterina*.

Under the head of Variation many observations of much interest are recorded. Study of the variations in *Agaricocrinus* emboldens Miss KLEM (173) to reduce the 42 described species to 10; her account of the development is, however, vitiated by incorrect homologies, and it is not clear how much is only *a priori* speculation; work of this kind would be most valuable if conducted on strict biometric lines. From a study of many specimens of the starfish *Pycnopodia helianthoides*, RITTER & CROCKER (283) prove that the sixth ray lies in the plane of the larval organ, between rays I and II of Ludwig, and that extra rays up to a total of twenty are added adjacent to I and II on the side next the sixth ray, a bilateral symmetry of skeletal and internal structures being thus maintained; they believe that the process of budding is initiated by the water ring, the points of budding corresponding to the ends of the curved larval hydrocoel, that the multiplication of the rays is merely a continuation of the process that gives rise to the original five, that the bilateral symmetry of the adult is a continuation of that of the larva, and that the sixth ray is intimately related to the larval organ. Concerning the relations of adult to larval symmetry the views of GOTO, GRAVE (135), and MACBRIDE (214) may be compared.

C. Most of the Physiological observations recorded are of interest rather to the general biologist than to the specialist on Echinoderms; such as affect the latter have already been alluded to. UEXKUELL (333) continues his elaborate researches into the nervous reactions of Echinoids. Heliotropism in Crinoids and Blastoids can scarcely have the effect suggested by KLEM (173) owing to the diffusion, if not the complete obscuration, of daylight at the depths inhabited by those animals.

D. The classification, under the several divisions headed Bionomics, of scattered observations that would otherwise escape notice is probably no less valuable than interesting. MEAD's proof (228) that the extent and rapidity of growth in the young starfish simply depends on the amount of food it can get, and that sexual maturity comes when a certain size is reached, independently of age, carries important biological and practical consequences. He also shows that, given sufficient food, the extra work entailed by the reparation of an injury does not affect the rate of growth. HUBRECHT (165) and HORST (161) contend that in *Linckia* a single arm can regenerate the whole animal. This however conflicts with the experiments of MEAD and also of Miss KING (171) on regeneration in *Asterias vulgaris*. In nature, say both these authors, an injured arm is thrown off and replaced by a fresh one; but a mutilated arm, if protected, can replace its missing portion, cannot however reproduce a disc. The disc, says Miss KING, can reproduce all arms; from an interradiial cut in the disc one or more arms may grow out, thus accounting for most (?all) cases of hyperactinry; 2 rays and portion of disc minus madreporite reproduce madreporite in no fixed position; but when the authoress says that this "shows conclusively that the position of the madreporite is a variable one and does not depend on some polarity in the disc," she probably does not intend to enunciate a morphological maxim. Ingenious mutilations since such accidents do not occur in nature.

is not a phenomenon of adaptation." To judge from the descriptions of the mutilations and from the diagrams, the present paper treats a starfish as though it had an almost homogeneous structure; except in one experiment where the digestive caeca were removed, we are never told the relation of the cuts or the new growths to the internal anatomy; precise experiment and microscopic observation are much needed.

The heading of section x has been altered to "Echinoderms as Geological Agents" in order to include other functions than the passive one of rock-forming. The rock described by DEECKE (84) as an "Echinoderm-breccie" is really an Eocene conglomerate derived from the degradation of the immediately preceding Saltholm Limestone; the occurrence of the Echinoderm remains in continuous beds several centimetres thick is probably due to the sifting action of currents.

F. The most important embryological work of the year is that of GRAVE (135) on *Ophiura brevispinia*, the species called *O. olivacea* in his otherwise discrepant preliminary account (110) Zool. Rec. 1899. Misfortune, however, seems to have attended his labours from first to last; not only was his memoir originally issued in such a form as to be unintelligible, but even as corrected by him there are errors in both text and plates, and, what is of more importance, his somewhat startling conclusions are based on a series of observations often separated by wide intervals, some critical stages not having been preserved. He infers from the appearances at 36 hours that the gastrula was formed by delamination from a planula. At 42 hours he finds the hydrocoel rudiment springing directly from the archenteron, and not connected with either anterior or posterior enterocoels; a pouch identified as left posterior (or hypogastric) enterocoel is constricted off from the archenteron, leaving the stomach, while the epigastric enterocoel is not seen till 48 hours and is then supposed to be the right anterior enterocoel, which has otherwise vanished. [In other echinoderms that cavity merges with the left anterior enterocoel while the epigastric or aboral coelom is derived from a distinct right posterior enterocoel.] At this stage the stone-canal connects hydrocoel and left anterior enterocoel, although the dorsal pore-canal has not been formed. Twelve hours at a most critical period are now unrepresented, and the appearances presented at 60 hours are explained by GRAVE as due to the rotation of the hydrocoel and all its 5 lobes through 180°, the first-formed lobe (No. 1 of GRAVE) having already passed through 180° from its point of origin, making "a total rotation of 360°." In other words, whereas at 48 hours lobe 3 of the hydrocoel pointed to the anterior end of the larva (or North) and the opening of the stone-canal in lobe 5 was S.S.E., now it is supposed that lobe 3 points to the posterior end or S., while the stone-canal is almost N.N.W. and between 5 and 1. In this interradius also lies the [left ?] anterior enterocoel, which partly fuses with extensions from the hypogastric enterocoel to form the outer periaemal ring, and partly sends out an additional projection to form the inner periaemal ring, while a third portion remains as the rudiment of the axial sinus (ampulla) and is already connected, by a canal, with a pore at first on the aboral surface but at a much later stage migrating to the oral surface. If this interpretation be correct, then all the asymmetrical structures of the adult lie in the interradius 5-1, which marks the closure of the water-ring; and this also is directed towards the anterior end of the larva, identified by GRAVE with the preoral lobe, while radius 3 points to that spot on the larva originally marked by the blastopore. Hence the plane of bilateral symmetry of the adult has, owing to an alleged enormous rotation of the hydrocoel, come to coincide with that of the larva. A similar coincidence [not preceded by a similar rotation] occurs in *Asterias pallida* according to GORO. But in *Asterina gibbosa* both GORO and MACBRIDE place the stone-canal, axial sinus, &c. in the interradius 1-2 of



GRAVE, while the preoral lobe and union of the water-ring are in 5-1; since GRAVE has not seen the closure of the hydrocoel, it is possible that his identification of the radii is incorrect, especially as the torsion is in a contrary direction to the torsion of oral and aboral systems in *Asterina*. The many interesting speculations suggested by Dr GRAVE's inferences will be more ripe for discussion when he shall have supplied information as to the missing stages and a more detailed series of sections throughout.

Not much serious study of post-larval growth-stages was accomplished during the year, but BEDFORD (25) did what he could with insufficient material. The results of LAMBERT, MEAD, KLEM, and RITTER & CROCKER have already been noticed. A large amount of work intensely interesting to the biologist has been turned out by the experimental embryologists; but of this a sufficient account is given under II, F, viii.

III. A. Under Geographical Distribution, in which bathymetric as well as horizontal extension is included, the chief additions to knowledge are from the Antarctic and Indian Oceans, being specially connected with the voyages of ss. 'Belgica,' 'Valdivia,' and H.M.S. 'Investigator.' The rediscovery of what appears to be *Astrophiura*, though not determined as such, is an event of importance. Valuable studies on Arctic Echinoderms are numerous, but produce no startling novelty. A good deal of faunistic work has also been done in the West Indies. R. PERRIER (263, 264) describes several new genera and species of Holothurians dredged by the 'Travailleur' and 'Talisman' without giving the localities where they were found [have the labels been lost?].

III. B. Out of the mass of notes concerning fossil forms we may select for mention: the writings of FOURTAU on Egyptian Tertiary and Cretaceous *Echinoidea*, especially No. 115, in which he is assisted by GAUTHIER; OPPENHEIM's description of the fauna of the Priabona beds (251); FICHEUR (108, 109) on Algerian Cretaceous *Echinoidea*; LISSAJOUS' (19) list of Mesozoic Echinoderms near Mâcon; LAMBERT on Echinoids in the Vesulian of Indre (186) and the Lias and Infra-Lias of l'Yonne (187); ROWLEY (289-291) on Crinoids and Blastoids from the Lower Carboniferous rocks of Missouri; STUERTZ (325) on Lower Devonian Asteroids from Bundenbach; WELLER's description (348) of a Crinoid fauna from the Niagaran of Chicago resembling that from N.W. Europe. The distribution of Echinoderms in the Chalk of S.E. England is carefully studied by DIBLEY (92) and ROWE (288), while valuable faunal lists of the Lower Cretaceous and Jurassic of the French Alps are published by KILLIAN & LORY (170). BOEHM (41) records a Blastoid from Timor; FRECH (124) one from Persia. The list of Miocene *Antedonidae*, so recently increased by NICOLAS and P. DE LORIOL, is added to by NOELLI (243), who describes several cups and centrodorsals from Piedmont.

An attempt has been made to shorten both sections of Part III by quoting, as a rule, the generic names alone; reference to these in the Systematic Part, IV, will however show what are the species dealt with in each case.

IV. Continuing the idea just mentioned, it is generally possible to discover all the species discussed in any paper, by turning first to the reference under III, noting the genera, and then turning them up in IV. Thus, under NOELLI (243) is a reference III, B, ii, d; turning to this, one learns that the paper deals with "spp. of *Pentacr.*, *Conocr.*, *Antedon*, and *Actinometra*"; looking up these genera under IV, F, one finds all the species in alphabetical order. To a less extent the same plan may be followed with the references to II. When no clue to the species is obtainable in this way, the names of the genera have been inserted after the title, and the same course has been followed when it is advisable to direct attention to an entry not otherwise indicated; see, for instance, *Acloques* (1). Conversely, when a generic or specific name is entered under --



without remark, reference to the sections of Part II or III, as indicated after the Title, will generally show the nature of the quotation. Thus, it is easy to understand that the numerous names quoted from GREGORY in BATHER (19) are those of genera whose systematic position is discussed, changed, or merely fixed by that author's new classification.

The works that deal with the wider questions of taxonomy have already been alluded to under II, A, in connection with phylogeny, while those descriptive of recent or fossil faunas have been mentioned under III. A number of new species of all Classes are mentioned in CHUN; none are adequately described, but several are illustrated, and to some of the figures names are attached. If these are to rank as new species, such a mode of publication deserves censure. Part VIII of P. DE LORIOL's *Notes pour servir* (207) discusses 16 species of *Echinoidea*, *Asteroidea*, *Ophiuroidea*, and *Crinoidea*, both Mesozoic and Recent, 11 being new, with 2 new genera of Echinoids; the curious phrase "localité certaine" applied to the source of *Antedon doederleini* suggests that the localities of the other species are uncertain. Among *Holothurioidea* new species are described by R. PERRIER (263, 264) who does not condescend to give illustrations any more than localities. SPANDEL (313) describes spicules of *Synapta* from the Oligocene, and claims that they are the first true Synaptid remains found fossil. Several new fossil *Echinoidea* are made known by GAUTHIER in FOURTAU (115), but since the date of this paper is 1900 and each new species is introduced as "Gauthier 1899," it is not easy to tell what is new and what is not, especially as there is nothing to distinguish the contributions of GAUTHIER from those of FOURTAU. Many new genera and species are established by LAMBERT (186, 187) and here it is even more difficult to discover the novelties; but since the latter paper is full of misprints it seems possible that the erudite author was not given the chance of correcting his proofs; his own kind help has enabled the present Recorder to remove some obscurities. Another valuable paper, marked by care and learning, is that of SCHLUETER (299) on species of *Brissopsis*, *Diplodetus* [n. g.], *Plesiaster*, and *Cardiaster*. It would be a great boon to the weaker brethren if these eminent palaeontologists would remember that all have not so intimate an acquaintance with the profundities of Echinoid nomenclature as to recognise a new name the moment it is printed: it is so much easier for the author of a new genus or species to affix the sign n. g. or n. sp., than for an over-worked Recorder. Other fossil Echinoids are described by FICHEUR (109), ARTHABER (124), OPPENHEIM (251), and SIMIONESCU (306), the last paper being here recorded thanks to the generosity of its author. A few new species are among the Malayan *Echinoidea* and *Asteroidea* described by BEDFORD (25). The *Echinoidea* and *Ophiuroidea* of the 'Belgica' are described, but not yet figured, by KOEHLER (180). STUERTZ (325) with his usual skill has worked out some more of the wonderful Bundenbach starfish, but has been unfortunate in his new names. VERRILL's revision of *Ophiuroidea* (341) has already been noticed: here again one finds old names said to be new, new names not said to be anything, names so confusing as *Ophictodia* and *Ophientodia* with which even their own author seems to have struggled in vain, genera or subgenera (one is rarely clear which) sometimes with one species nominated as type, sometimes with another, sometimes with both: small wonder if the Recorder mutters "Reviser, revise thyself!". PERNER (261) following JAEKEL, has revised the nomenclature of Barrande's *Cystidea* of Bohemia, while a somewhat similar task has been performed for the *Crinoidea* by BATHER (21). Several species of *Agaricocrinus* have been revised and reduced by KLEM (173). Other fossil crinoids are described by BEEDE (28), NOELLI (243), OPPENHEIM (251), ROWLEY (289-291), WELLER (348), and SOLLAS (312). *Cicerocrinus* of the last author was almost synchronously described by Jaekel as *Lagarocrinus*. Finally, under the curious name

*Paropsonema* [Aesch. Agamemnon, 1447] CLARKE (68) describes an even more curious fossil.

The additions to our systematic lists may be analysed thus :—

	New genera	Altered generic names	New sub-genera	New species	New varieties
Holothuriodea	1	1	0	11	2
Echinoidea	11	1	1	68	5
Asteroidea	10	0	0	13	3
Ophiuroidea	7	2	1	16	0
Crinoidea	4	0	0	51	0
Cystidea	0	0	0	2	0
Blastoidea	0	0	0	6	0
Incertae Sedis	1	0	0	1	0
Total	34	4	2	168	10

These numbers are given with the usual reservation necessitated by the obscurity of authors; several of the names are known to be synonyma. All the generic names ever used for *Pelmatozoa*, perhaps also for *Ophiuroidea*, are believed to occur in this year's Index, which has thus a special value.

#### CORRIGENDA in previous Records.

Record for 1893, vol. xxx :—

- p. 11. "73. EFISIO, M. Saggio etc." should be "73. MARCIALIS, EFISIO. Saggio etc."

Record for 1897, vol. xxxiv :—

- p. 10. No. 61. p. 193 should be p. 192.  
 p. 17. No. 130. pl. xxxiv should be pl. xxxv.  
 p. 32. No. 306. p. 261 should be p. 254.  
 p. 62. line 4. replace the paragraph by,—*Sigmodota* Studer, genotype *S. purpurea*, revived for all spp. of *Chiridota* with sigmoid spicules; ØSTERGREN (255) Zool. Anz. xx, p. 154, footnote.

Record for 1899, vol. xxxvi :—

- p. 9. No. 1. [III, D, iii] should be [II, D, iii].  
 No. 4. Add date (18 Aug.).  
 p. 10. No. 14. Add date (15 Apr.).  
 p. 12. No. 55. Reference should read "12th Ann. L. M. B. C. Rep. (Dec. 1898, reissued in) Tr. Liverp. Biol. Soc. xiii, pp. 23-27 (Sept. 1899)."  
 p. 13. No. 64. See No. 74 of this Record.  
 p. 19. "HOLZAPFEL, E. See STOLLEY, E." add "and KAYSER (132)."  
 Between lines 11 and 12 from bottom, insert "JAHN, J. J. See WAAGEN & JAHN (246)."  
 p. 20. line 3. dele "& HOLZAPFEL, E."  
 p. 25. No. 179. Reference should read "fasc. 1, pp. 52-62 (15 Apr.), pl. ii (issued with fasc. ii, 18 Aug.)."  
 p. 30. No. 236 and p. 31 No. 245. Add date (15 Feb. 1900).  
 p. 55. *Periamna* should be *Periamma*.  
 p. 57. *Astrodapsis*. Insert [melius *Astrodapsis*].  
 p. 94. *Caryocystis minutus*. Insert [err. pro *munus*].

The Recorder is always glad to receive corrections, and is specially grateful when Authors, Editors, or Publishers  
 asterisk indicating that a work has not been published.

## I. TITLES.\*

1. ACLOQUE, A. Faune de France.....Thysanoures, Myriopodes, Arachnides, Crustacés, Nématelminthes, Lophostomés, Vers, Mollusques, Polypes, Spongiaires, Protozoaires. 18mo, 500 pp., 1664 text-figg. Paris: Baillière (1898, dated 1899).  
[III, A, ii. iv, A, B, *Ophioderma*.]  
Échinodermes, pp. 454-466.
2. \*——. Le monde sous-marin. 8vo, 318 pp., 326 text-figg. Abbeville: Paillart (1899). [II, D, i.]  
Review: by C. DE KIRWAN, Rev. Quest. Sci. (2) xvii, pp. 575-588 (April, 1900.)
- AIRAGHI, C. (4) Zool. Rec. 1899. Abstract: Boll. Com. geol. Ital. xxxi, pp. 89, 90.
3. ———. Di alcuni Conoclipeidi. Boll. Soc. geol. Ital. xix, pp. 173-178, pl. i. (31 May.) [III, B, ii, d. iv, c.]  
Abstracts: by J. LAMBERT, Rev. paleozool. iv, pp. 178, 179 (Oct. 1900); by V[INASSA DE REGNY], Riv. ital. Pal. vi, p. 109 (Sept. 1900).
4. ———. Echinidi postpliocenici di Monteleone Calabro. Atti Mus. Milano xxxix, pp. 65-74. (June.) [III, B, ii, b. iv, c.]  
Abstracts: by J. LAMBERT, Rev. paleozool. iv, p. 179 (Oct. 1900); by P. E. VINASSA DE REGNY, Riv. ital. Pal. vi, p. 109 (Sept. 1900).
5. ———. Dell' *Echinolampas laurillardii* Agas. e Des. Riv. ital. Pal. v, pp. 109-111. (31 Dec. 1899, received in London 17 Feb. 1900.) [III, B, ii, a. iv, c.]  
Abstract: by J. LAMBERT, Rev. paleozool. iv, p. 136 (July 1900).
- ALBRECHT, E. (7) Zool. Rec. 1899. Abstract by O. BÜTSCHLI, Zool. Centrbl. vii, pp. 680, 681 (9 Oct. 1900).
- ALCOCK, A. See KOEHLER (179).
6. ALESSANDRI, G. DE. Sopra alcuni fossili Aquitaniani dei dintorni di Acqui. Boll. Soc. geol. Ital. xix, pp. 549-554. (20 Dec.) [III, B, ii, d.]
7. ALLEN, E. J. & TODD, R. A. The Fauna of Salcombe Estuary. J. Mar. Biol. Ass. (n. s.) vi, pp. 151-217, 1 map. (Nov.) [II, D, iii, a; vi; viii, c. III, A, ii.]
8. ALMERA, J. Compte-rendu de l'excursion.....à Montcada et à Sardanyola. Bull. Soc. geol. France (3) xxvi, pp. 732-741. (Dec. 1899.) [III, B, iv, h.]
9. ———. Compte-rendu des excursions...à Gracia et le Coll (Horta) et...à Vallcarca, au Tibidabo et à Esplugas. Bull. Soc. geol. France (3) xxvi, pp. 742-763. (Dec. 1899.) [III, B, ii, c; iv, f, h.]
10. A[MI], H. M. British American Echinoderms. Ottawa Natural. xiv, p. 56. (6 June.) [III, A, ii.]

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

The Symbols in [ ] refer to the divisions of the Subject-Index, II, III, IV. Those referring to the Systematic portion [IV, A-K] are inserted only when some question of definite importance to the systematist is dealt with in the work. The names of the genera mentioned in any work can generally be gathered from the lists given under Distribution [III, A or B], and the species can then be traced by turning to Section IV. Only where this was not possible have names been inserted after the title.

11. ANDERSON, A. R. S. Report of the Surgeon Naturalist for the season 1898-99. Rep. Marine Surv. India, 1898-1899, pp. 5-16. (1899.) [II, B, i, c, 8; ii, c: D, iii, c; v, a. III, A, iii. IV, c.]
12. ANDERSSON, J. G. Ueber die Stratigraphie und Tektonik der Bären Insel. Bull. Geol. Inst. Upsala, iv, part 2, pp. 243-280, ii pls. [III, B, iii, e.]
13. ANDREWS, C. W. et alii. On the marine fauna of Christmas Island (Indian Ocean). P. Zool. Soc. London, 1900, pp. 115-141, pls. xii, xiii. I. Introductory note by C. W. ANDREWS, pp. 115-117. (1 June.) [II, D, iii, c. III, A, iii.]  
*Echinoderma* determined by F. J. BELL, p. 116.
14. A[NDREWS], E. A. Merogeny. Amer. Natural. xxxiv, pp. 980-982. (Dec.) [II, F, viii.]  
 A Review of Y. DELAGE (43) Zool. Rec. 1898, and (67) Zool. Rec. 1899.  
 —. See also CONANT (71), GEMMILL (125), HAMMAR (149), HERBST (156).
15. ANDRUSOV, N. J. Ueber *Ephipiellum symmetricum* Jar. Lomnicki. SB. Ges. Dorpat, xii, pp. 248, 249. (July.) [III, B, ii, d. IV, E.]
16. ANGELIS D'OSSAT, G. DE & MILLOSEVICH, F. Seconda spedizione Böttogo (1895-97). Studio Geologico sul materiale raccolto da M. SACCHI, 8vo, x+212 pp., iv pls., i col. map, frontsp., text-figg. Società Geografica, Roma. [III, B, iii, c, I.]  
 "Fossili dell' Harrar" is by ANGELIS D'OSSAT alone.  
 —. See also VERRI (339).
- ANTHULA, D. J. (18) Zool. Rec. 1899. Abstract by V. UHLIG, N. Jahrb. Min. 1901, i, pp. -470-474- (June 1901). Review by J. LAMBERT, Rev. paleozool. v, p. 41 (Jan. 1901).
17. APOSTOLIDÉS, N. C. L'Ophiure. In BOUTAN, L. and others. Zoologie descriptive &c., vol. i, pp. 300-326 (dated 1900, but publ. June, 1899). [II, B, i, e, 1, 5-12: c, iii: D, iii, e; vi: F, ii. IV, A.]
- ARNAUD, H. (10) Zool. Rec. 1896. Abstract by A. TORNQVIST, N. Jahrb. Min. 1900, ii, p. -486- (Dec. 1900.)
- ARTHABER, G. v. See FRECH (124).
- BARROIS, C. See LAMBERT (186).
18. BATAILLON, E. La segmentation parthénogénétique expérimentale chez les Amphibiens et les Poissons. C.R. Ac. Sci. cxxxi, pp. 115-118. (July.) [II, F, viii.]  
 Abstract: by C. F., Rivista Biol. general. iii, p. 139 (Feb. 1901).
- BATHER, F. A. (11) Zool. Rec. 1893. See JAEKEL (167).—(25) Zool. Rec. 1897. Abstract: Feuille Natural. xxxi, p. 69 (1 Dec. 1900).—(26) Zool. Rec. 1899. Review by O. JAEKEL, N. Jahrb. Min. 1900, ii, p. -485- (Dec. 1900).
19. —. A treatise on Zoology edited by E. RAY LANKESTER. Part III, The Echinoderma by F. A. BATHER, assisted by J. W. GREGORY & E. S. GOODRICH. 8vo, viii+344 pp., 309 text-figg., London: Black. (March.) [II, A, ii, iii: B, i, a, 1-12; b, 1-12; c, 1-7; d, 1-3, 5, 6; e, 1, 3, 5-7; f, 1-3, 5-10; g, 1, 4-8, 11; h, 1, 5, 6: E, iii, iv. IV, A-H.]  
 Reviews: Athenaeum (5 May, 1900); Geol. Mag. (n. s.), dec. 4, vol. vii, pp. 233, 234 (May, 1900); Ann. Scott. Nat. Hist. 1900, p. 191 (July); Zoologist, iv, p. 242 (15 May, 1900); Amer. Natural. xxxiv, pp. 675, 676 (Aug. 1900); by R. F. S[CHARFF], Irish Natural. ix, pp. 118, 119 (May 1900); by W. D. P[URMAN]

- Nat. Hist. (7) vi, pp. 341-343 (Sept. 1900); by J. LAMBERT, Rev. paleozool. iv, pp. 130, 131 (July 1900) and pp. 171-173 (Oct. 1900); by E. A. M[INCHIN], Nature, lxii, pp. 545, 546 (4 Oct. 1900).  
Abstract: by H. LUDWIG, Zool. Centrbl. viii, pp. 387-390 (2 July, 1901).
20. [BATHER, F. A.] Studies in Edrioasteroidea. II. *Edrioaster buchianus* Forbes sp. Geol. Mag. (n. s.), dec. iv, vol. vii, pp. 193-204, pls. viii-x, 7 text-figg. (May.) [II, B, i, g, 5-8, 11.]  
Abstract: by C. V. C[ROOK], Geol. Centrbl. i, pp. 59, 60 (15 Jan. 1901).
21. —. The Lower Palæozoic Crinoids of Bohemia. Ann. Nat. Hist. (7), vi, pp. 102-121, 7 text-figg. (July.) [II, B, i, f, 5. III, B, iv, a. IV, F.]  
A review of WAAGEN & JAHN (246) Zool. Rec. 1899.  
Abstract: by J. LAMBERT, Rev. paleozool. iv, p. 175 (Oct. 1900).
22. —. Pores in the ventral sac of fistulate Crinoids. Amer. Geol. xxvi, pp. 307-312. (Nov.) [II, B, i, f, 5.]  
A reply to SPRINGER, F. (314).  
Abstract: by T. W. STANTON, Geol. Centrbl. i, p. 413 (1 July, 1901).
- See also WELLER (348), ZITTEL (369).
23. BAUMBERGER, E. & MOULIN, H. La série néocomienne à Valangin. Bull. Soc. Neuchatel, xxvi, pp. 150-210, 2 pls., 6 text-figg. (1898, received in London, March 1900.) [III, B, iii, b, 2.]
24. BEAUMONT, W. I. The fauna and flora of Valencia harbour on the west coast of Ireland. Part II. The Benthos. VII. Report on the results of dredging and Shore-collecting. P. Irish Ac. v, pp. 754-798, chart ii. (June.) [II, D, ii; III, A, d. III, A, ii.]  
+BEDFORD, F. P. (29) Zool. Rec. 1899. Abstract by H. LUDWIG, Zool. Centrbl. vii, p. 436 (26 June, 1900).
25. —. On Echinoderms from Singapore and Malacca. P. Zool. Soc. London, 1900, pp. 271-299, pls. xxi-xxiv, text-figg. (1 Aug.) [II, B, i, c, 7, 8, 9; II, B, c: D, iii, c; iv; vii; d; ix: F, vii, c. III, A, i, iii. IV, C, D.]  
Prelim. Abstr.: Zool. Anz. xxxiii, p. 231 (23 April, 1900).
26. BEECHER, C. E. Conrad's Types of Syrian fossils. Amer. J. Sci. (4), ix, pp. 176-178. (March.) [II, E, i, c.]
27. —. On a large slab of *Uintacrinus* from Kansas. Amer. J. Sci. (4), ix, pp. 267, 268, pls. iii, iv. (April.) [II, E, i, c: F, vii, f. III, B, iii, b, I.]  
— See SMITH, G. O. (310).
28. BEEDE, J. W. Two new Crinoids from the Kansas Carboniferous. Kansas quart. (ser. A.), ix, pp. 21-24, and 25, 26 numbered as pl. v. (Jan.) [III, B, iv, d. IV, F.]  
Abstract: by J. LAMBERT, Rev. paleozool. v, p. 168 (July, 1901).
29. —. Carboniferous invertebrates. Being Part I of "Paleontology, Part II, Carboniferous and Cretaceous." Kansas Univ. geol. Surv. vi, pp. 1-189, pls. i-xxii, on pp. 189-232. [II, E, iv. III, B, iv, d. IV, C, F.]
- BELL, F. J. See ANDREWS, C. W. (13).
30. BENHAM, W. B. Zoological results of Trawling trials off the coast of Otago. Tr. N. Zealand Inst. xxxii, pp. 1-3. (June.) [III, A, iv.]



31. BENOIST, E. Note pour servir à l'étude de la géologie du Département de l'Indre. Étage Bathonien. Feuille Natural. xxxi, pp. 2-6, pl. i. (1 Nov.) [III, B, iii, c, 2, 3.]
32. BERGH, R. S. Vorlesungen über allgemeine embryologie. 8vo, x + 290 pp., 126 text-figg. Wiesbaden: Kreidel (1895). [II, F, i; iv; vi, a, 7, 10; viii.]
33. —. Das Schicksal isolierter Furchungszellen. Zool. Centrbl. vii, pp. 1-14. (9 Jan.) [II, F, viii.]  
Summarises DRIESCH, Zool. Rec. 1891, (70) Zool. Rec. 1893, (52) Zool. Rec. 1898; FIEDLER, Zool. Rec. 1891; MORGAN (121) Zool. Rec. 1895; and ZOJA (358) Zool. Rec. 1897.
- See also DRIESCH (96, 97), HERBST (156), KING, H. D. (and 171), LOEB (199, 201, 202), MORGAN (235), WINKLER (358).
34. BETTONI, A. Fossili domeriani della provincia di Brescia. Abh. Schweiz. pal. Ges. xxvii, Mem. 3, 88 pp., ix pls. (1900, received in London, 23 April, 1901.) [II, B, iii, d.]
- BEUSHAUSEN, L., see STUERTZ (325).
35. BIGOT, A. Feuille des Pieux. In 'Comptes rendus des Collaborateurs.' Bull. Carte geol. France, lxxiii, pp. 16-18. [III, B, iv, h.]
36. BLANCKENHORN, M. Neues zur Geologie und Paläontologie Aegyptens. I. Zeitschr. Deutsch. geol. Ges. lii, pp. 21-47, and following table. (July.) [III, B, iii, b, 1.]
37. —. Neues zur Geologie und Paläontologie Aegyptens. II. Das Palaeogen. Zeitschr. Deutsch. geol. Ges. lii, pp. 403-479, 2 folding tables, 1 text-fig. (Dec.) [III, B, ii, e, f.]
38. —. Studien in der Kreideformation im südlichen und westlichen Siebenbürgen. Zeitschr. Deutsch. geol. Ges. lii, Protokoll pp. 23-37, 4 text-figg. (Dec.) [III, B, iii, b, 1.]
39. BLAYAC, J. Sur le Crétacé inférieur de la vallée de l'Oued Cherf (province de Constantine). C.R. Ac. Sci. cxxiii, pp. 958-960. (Dec. 1896.) [III, B, iii, b, 2.]
40. BLEICHER, — & MIEG, —. Sur un gisement callovien découvert aux environs de Winckel (Massif jurassique de Ferrette). Bull. Soc. geol. France (3), xxiv, pp. 805-807. (Feb. 1897.) [III, B, iii, c, 2.]
41. BOEHM, G. Reisenotizen aus Ost-Asien. Zeitschr. Deutsch. geol. Ges. lii, pp. 554-558. (Dec.) [III, B, iv, e.]
- BOEHM, J. See BOULE, M., BRUNHUBER (50), PETRACZEK (265), SIMIONESCU (306).
42. BONNEVIE, KRISTINE. "En eiendommelig ny molluskart der lever hos...*Stichopus tremulus*." Nyt Mag. Naturv. xxxvii, p. 355. [II, D, viii, b.]
43. BONNEY, T. G. The physical history of the Caucasus. Being Appendix A to "The Exploration of the Caucasus," by D. W. FRESHFIELD. Pp. 223-232, coloured map. London: Arnold (1896). [III, B, iii, d.]
- BORNHARDT, W. See WOLFF (360).
44. BOSSHARD, H. Zur Kenntnis der Verbindungsweise der Skelettstücke der Arme und Ranken von *Antedon rosacea* Linck (*Comatula mediterranea* Lam.). Jena. Zeitschr. (n. s.), xxxiv, pp. 65-112, pls. iii-viii. (1 Aug.) [II, B, i, 5, 10; a, vii, 2, 1, b.]  
Abstracts: J. R. Micr. Soc. 1897  
LUDWIG, Zool. Centrbl. viii,

- BOULE, M. (45) Zool. Rec. 1899. Abstract by J. BOEHM, N. Jahrb. Min. 1900, ii, p. 454- (Dec. 1900.)
45. BOURSAULT, H. Les Marnes intra-gypseuses dans les quartiers nord de Paris. Naturaliste, xix, pp. 221, 222. (1 Oct. 1897.)  
[III, B, ii, f.]
- BOUTAN, L. (Editor). Zoologie descriptive. Anatomie—Histologie et dissection des formes typiques d'Invertébrés. In II Vols. 8vo, vol. I, iv + 624 pp., vol. II, iv + 624 pp., numerous text-figg. Paris: Doin (1900). [Pubd. June, 1899.] See AROSTOLIDÉS, N. C. (17) & CUÉNOT, L. (75).
46. BOVERI, T. Zellen-Studien. Ueber das Verhalten der chromatischen Kernsubstanz bei der Bildung der Richtungskörper und bei der Befruchtung. Jena. Zeitschr. xxiv, pp. 314-401, pls. xi-xiii. (26 Mar. 1890.)  
[II, F, viii.]  
Also published separately as Heft 3. Jena: Fischer.
47. BRITISH MUSEUM (NATURAL HISTORY). Methods of collecting and preserving various Soft-bodied Invertebrate Animals. 8vo, 16 pp. London: sine anno [1900].  
[II, E, i, a.]
48. BROILI, F. Zur Fauna der Pachycardientuffe der Seiser Alp. Centrbl. Min. 1900, pp. 369-373. (30 Dec.)  
[III, B, iii, e.]
- BROOKS, W. K. See GRAVE, C. (135).
49. BROWNE, E. T. The fauna and flora of Valencia harbour on the west coast of Ireland. I. The Pelagic fauna (1895-98). P. Irish Ac. v, pp. 669-693. (June.)  
[II, F, v, d. III, A, ii.]
50. BRUNHUBER, —. Geologische Neuigkeiten. 1. Tertiär im Untergrund der bayerischen Zucker-Fabrik. 2. Hellkofener Kreidemergel. Ber. Ver. Regensburg, vii, pp. 120-128. [III, B, iii, b, I.]  
Abstract: by J. BOEHM, N. Jahrb. Min. 1901, i, p. 446- (June, 1901).
51. BRYDONE, R. M. The Stratigraphy and Fauna of the Trimmingham Chalk. 8vo, 16 pp., ii pls. London: Dulau. (Oct.)  
[III, B, iii, b, f.]
- BUETSCHLI, O. See ALBRECHT, E., WILSON, E. B.
52. BURBIDGE, W. H. Notes [Stalked larva of *Antedon*]. Sci. Gossip (n. s.), vii, pp. 215, 216, 3 text-figg. (Dec.)  
[II, F, v, f.]
53. BUSQUET, P. Les Êtres vivants—Organisation—Évolution. 8vo, 184 pp. Paris: Carré & Naud. (1899.)  
[II, B, i, a, 2.]
54. CAMPAGNA, F. Elenco di alcuni animali pelagici raccolti nel golfo di Palermo. Natural. Sicil. ii, pp. 177-181. (15 July, 1898.)  
[II, F, v, a. III, A, ii.]
- CANAVARI, M. See MARIANI (222), UHLIG (334).
55. CARBAJAL, L. D. La Patagonia: studi generali. Serie seconda: Climatologia e Storia naturale. 8vo, pp. xii + 674. S. Benigno: Canavese.  
[II, D, ix. III, A, vi.]  
"Echinodermi," pp. 411, 412.
56. CARLGREN, O. Ueber die Einwirkung des constanten galvanischen Stromes auf niedere Organismen. Zweite Mittheilung: Versuche an verschiedenen Entwicklungsstadien einiger Evertebraten. Arch. Physiol. 1900, pp. 465-480. (13 July.)  
[II, c, vii.]  
Review: by R. PEARL, Amer. Natural. xxxiv, pp. 977-979 (Dec.).  
Abstract: by W. A. NAGEL, Zool. Centrbl. vii, pp. 486, 487 (24 July, 1900).
57. CARTER, C. S. Red Chalk fossils at Redhill, near Goulceby, Linca. N. Naturalist, 1900, p. 291. (1 Oct.)  
[III, B, iii, b, I.]

58. CATECHISM SERIES. Zoology. Part I. The Invertebrata. 8vo, 112 pp. Edinburgh: Livingstone. [II, E, d.]  
CELESIA, P. See DRIESCH (96, 97).
59. CHADWICK, H. C. L. M. B. C. Memoirs on Typical British Plants and Animals. *Echinus*. Liverpool Marine Biological Committee, Mem. iii. 8vo, viii + 28 pp., v pls. (Feb.). Also P. Liverp. Soc. xiv, pp. 298-325, v pls. [II, B, i, c, 5-9, 11, 12: F, ii.]
60. —. Summary of Port Erin Plankton in 1899. In W. A. HERDMAN'S 13th Ann. L. M. B. C. Rep., pp. 29-38, pls. i, ii, published Dec. 1899. Also re-issued in P. Liverp. Biol. Soc. xiv, pp. 115-124, pls. vi, vii. (Sept. 1900.) [II, F, v, a. III, A, ii.]
61. CHOFFAT, P. Sur le Crétacique de la région du Mondégo. C.R. Ac. Sci. cxxiv, pp. 422-424. (March, 1897.) [II, B, ii, a. III, B, iii, b, 1.]
62. —. Recueil de monographies stratigraphiques sur le système crétacique du Portugal. II<sup>e</sup> Étude. Le crétacique supérieur au Nord du Tage. Mem. Serv. geol. Portugal, 1900, 288 pp., xi pls. [II, B, ii, a. III, B, iii, b, 1, 2.]
63. CHUN, C. Aus den Tiefen des Weltmeeres. Schilderungen von der deutschen Tiefsee-Expedition. 8vo, viii + 550 pp., 46 pls., 2 maps, 390 text-figg. Jena: Fischer. [III, A, iii, vi. IV, B, c, D, E, F.]  
Notes on Echinoderms by L. DOEDERLEIN & H. LUDWIG.
64. CLARK, E. V. Geological Notes on the Cliffs separating Aldinga and Myponga Bays. Tr. R. Soc. S. Australia, xxiv, pp. 1-5. (Aug.) [III, B, ii, f.]
65. CLARK, H. L. Further notes on Bermuda Echinoderms [in Report of Meeting, N. Y. Acad. Sci. 12 Nov. 1900]. Science (n. s.), xii, p. 885. (7 Dec.) [IV, B (*Stichopus*).]  
Prelim. Abstract only.  
— See also ROULE (287).
66. CLARK, W. B., BAGG, R. M., & SHATTUCK, G. B. Upper Cretaceous formations of New Jersey, Delaware, and Maryland. Bull. geol. Soc. Amer. viii, pp. 315-358, pls. xl-l. (15 April, 1897.) [III, B, iii, b, 1.]
67. CLARKE, J. M. The Oriskany fauna of Becraft Mountain, Columbia county, N.Y. Mem. N. York Mus. iii, No. 3, 128 pp., ix pls. and map. (Oct.) [III, B, iv, f, g. IV, F.]
68. —. *Paropsonema cryptophya*; a peculiar Echinoderm from the *Intumescens*-zone (Portage beds) of western New York. Bull. N. York Mus. viii, pp. 172-178, pls. v-ix. (Oct.) [III, B, iv, f. IV, K.]
69. CLELAND, H. F. The calciferous of the Mohawk valley. Bull. Amer. Pal. iii, No. 13, 26 pp., pls. xiii-xvi. (30 Nov.) [III, B, iv, h.]
70. CLÈVES, V. DE. Appendice—Animaux marins sans vertèbres et sans coquilles communs sur les plages. Description des planches B. à H. (Planche E. Échinodermes, pp. 131-134.) In DAUTZENBERG, P., Atlas de poche des coquilles des côtes de France, etc., 16mo. Paris: Klincksieck. (1897.) [III, A, ii.]
71. †CONANT, F. S. Notes on zoological collecting in Jamaica, W. I. Edited by E. A. ANDREWS. Johns Hopkins Univ. Circ. xix, pp. 23-25. (March.) [III, A, ii.]
72. COPPA, A. Studio geologico e paleontologico del Miocene del Sircusano. Atti Acc. Scienze (n. s.) ix, Mem. Sci. No. 4. 48 (Nov. 1899.) [II, E.]



73. COSSMANN, M. Rectifications de nomenclature. *Rev. paleozool.* iv, p. 186. (Oct.) [iv, c (*Lambertia*).]  
 —. See also SPANDEL (313).  
 CROCKER, G. R. See RITTER, W. E. & CROCKER, G. R. (283).  
 CROOK, C. V. See BATHER (19), SOLLAS (312).
74. CUÉNOT, L. Les idées actuelles sur les Échinodermes. *Intermed. biol.* i, pp. 437-440 & 450-459. (5 & 20 Aug. 1898.)  
 [ii, A, iii: B, i, a, 2, 3, 7, 9, 11, 12: C, ii, v: E, iii. iv, A.]  
 The reference was given incorrectly (64) *Zool. Rec.* 1899, where it was not indexed.
75. —. La Comatule. L'Oursin. In BOUTAN, L. and others. *Zoologie descriptive &c.*, vol. i, pp. 227-264, 265-299 (dated 1900, but pubd. June, 1899). [ii, B, i, c & f, 1, 2, 5-12: C, v: D, iii, c, f; vii; viii, c, f: E, i, b: F, ii; v, c.]
76. CUNNINGHAM, J. T. Sexual dimorphism in the animal kingdom. A theory of the evolution of secondary sexual characters. 8vo, xii + 318 pp., text-figg. London: Black. [ii, A, i: B, iii, c.]  
 —. See also SCHMEL (300).
77. CUSHNY, A. R. The distribution of iron in the Invertebrates. [Abstract in Report of Amer. physiol. Soc.] *Science* (n. s.), iii, p. 110 (24 Jan. 1896.) [ii, c, v.]
78. DALMADY, Z. Mas érzékek mint a mieink. [Other senses than ours.] *Potfuz. Termes. Kozl.* xxxii, pp. 50-61, text-figg. (April.) [ii, B, i, a, 2.]
79. DARTON, N. H. Jurassic Formations of the Black Hills of South Dakota. *Bull. geol. Soc. Amer.* x, pp. 383-396, pls. xlii-xliv. (22 Dec. 1899.) [ii, B, iii, c, 3.]
- DAUTZENBERG, P. See CLÈVES (70).
80. DAVENPORT, C. B. & GERTRUDE C. Introduction to Zoology: a guide to the study of animals for the use of secondary schools. 8vo, xiv + 412 pp., 311 text-figg. New York & London: Macmillan.  
 [ii, B, ii, d, 1: D, i: E, i, d.]  
*Echinoderma*, pp. 192-204, 357, 358, 386.
81. \*DAVIDOV (DAVYDOFF), K. O reghenerezitii u Ofiur, pp. 27-32. Ueber die Regeneration bei Ophiuren, pp. 54-59. *Trudui St. Petersb. Obshch.*, xxxi. [ii, D, vii.]  
 Preliminary to a paper in *Zeitschr. wiss. Zool.* Feb. 1901.
- DEARBORN, G. V. N. See NORMAN (247).
82. DEECKE, W. Die mesozoischen Formationen der Provinz Pommern. *Mt. Ver. Vorpomm.* xxvi, pp. 1-115. (1894.) [iii, B, iii, b, 1: c, 1.]
83. —. Die geologische Zusammensetzung und Schichtenfolge der Insel Rügen. *Jahresber. Geogr. Ges. Greifswald*, vii, pp. 10-40, text-fig. An abridgment of part of (82). [iii, B, iii, b, 1.]
84. —. Ueber eine als Diluvialgeschiebe vorkommende paleocäne Echinodermbreccie. *Mt. Ver. Vorpomm.* xxxi for 1899, pp. 67-76. (March.) [ii, D, x. iii, B, ii, f.]  
 Abstract: by E. GEINITZ, *N. Jahrb. Min.* 1901, ii, p. -132- (July, 1901).
- DELAGE, Y. (67) *Zool. Rec.* 1899. See LE DANTEC (194).
85. —. Sur la fécondation mérogonique et ses résultats. *C.R. Ac. Sci.* cxxix, pp. 645-648. (Nov. 1899.) [ii, F, viii.]  
 Abstract: by O. FUHRMANN, *Biol. Centrbl.* xx, pp. 424, 425 (15 June, 1900).

86. [DELAGÉ, Y.] Sur l'interprétation de la fécondation mérogonique et sur une théorie nouvelle de la fécondation normale. *Arch. Zool. Exp.* (3), vii, pp. 511-527. (Feb.) [II, F, viii.]  
 —. See also ANDREWS, E. A. (14), ROULE (287).
87. DEL BUE, G. Contributo alla conoscenza dei terreni miocenici di Castelnuovo nei Monti. *Riv. ital. Pal.* vi, pp. 121-136. (30 Sept.) [III, B, ii, d.]
88. DENCKMANN, A. Silur und Unterdevon im Kellerwalde. *Jahrb. geol. Landesanst.* Berlin, xvii, pp. 144-162. (1897.) [III, B, iv, g.]
89. DEPÉRET, C. & FOURTAU, R. Sur les terrains néogènes de la Basse-Égypte et de l'isthme de Suez. *C.R. Ac. Sci.* cxxxi, pp. 401-403. (Aug.) [III, B, ii, c, d.]  
 Abstract: *Nature*, lxii, p. 408 (23 Aug. 1900).
90. DE STEFANO, G. Il Cenomaniano di Brancalene Calabro. (Continuazione) *Paleontologia. Boll. Nat.* xx, pp. 27-32. (15 March.) [III, B, iii, b, I.]
- DESTINEZ, P. J. (71) *Zool. Rec.* 1899. Abstract by A. TORNQVIST, *N. Jahrb. Min.* 1901, ii, p. -321- (Aug.).
91. —. Quelques fossiles nouveaux du Famennien, rencontrés dans les assises (*Fa 2 a*), (*Fa 2 c*) et (*Fa 1 b*), à La Hesse (Tobogne), au Bois de Mont (Clavier) et à Clémodeau (Villers-le-Temple). *Ann. Soc. geol. Belgique, Bull.* xxvii, pp. clvi-clxi. (6 Sept.) [III, B, iv, f.]
92. DIBLEY, G. E. Zonal features of the Chalk pits in the Rochester, Gravesend, and Croydon areas. *P. Geol. Ass.* xvi, pp. 484-496, 2 text-figg. Appendix by E. T. NEWTON, pp. 496-499. (4 Sept.) [III, B, iii, b, I.]
93. DOEDERLEIN, L. Zoologische Ergebnisse einer Untersuchungs-fahrt des deutschen Seefischerei-Vereins nach der Bäreninsel und Westspitzbergen, ausgeführt im Sommer 1898 auf. S.M.S. "Olga." Die Echinodermen. Die Holothurien von Hubert Ludwig. Uebersicht der an den verschiedenen Stationen der Olga-Reise gefangenen Echinodermen: von C. HARTLAUB. *Wiss. Meeresuntersuch.* (n. s.) iv, Abteilung Helgoland, Heft 2, pp. 195-248, pls. iv-x. [II, B, ii, b: D, iv, vii: E, i, a: F, vii, d. III, A, ii, v. IV, D, E.]  
 Abstract: by H. LUDWIG, *Zool. Centrbl.* viii, p. 357 (4 June, 1901).  
 —. See also CHUN (63).
94. DOUVILLÉ, H. Examen des fossiles rapportés de Chine par la mission Leclère. *C.R. Acad. Sci.* cxxx, pp. 592-595. (March.) [III, B, iii, e; iv, b, d.]  
 —. See also GROSSOUVRE (145).
95. DOUXAMI, H. Le Tertiaire des environs de Sainte-Croix. (Jura Vaudois.) *Eclog. geol. Helvet.* iv, pp. 417-422. (Jan. 1896.) [III, B, ii, d; iii, b, 2.]
96. DRIESCH, H. Die isolirten Blastomeren des Echinidenkeimes. Eine Nachprüfung und Erweiterung früherer Untersuchungen. *Arch. Entwicklmech.* x, pp. 361-410, 20 text-figg. (25 Sept.) [II, F, viii.]  
 Abstracts: by R. S. BERGH, *Zool. Centrbl.* vii, pp. 863-865 (11 Dec. 1900); by P. C[ELLESIA], *Rivista Biol. general*, iii, pp. 133-136 (Feb. 1901).
97. —. Studien über das Regulationsvermögen der Organismen. 4. Die Verschmelzung der Individualität bei Echinidenkeimen. *Arch. Entwicklmech.* x, pp. 411-434, 13 text-figg. (25 Sept.) [II, F, viii.]  
 Abstracts: by R. S. BERGH, *Zool. Centrbl.* vii, pp. 865-867

(11 Dec. 1900); by P. C[ELESIA], Rivista Biol. general, iii, pp. 136-139 (Feb. 1901).

[DRIESCH, H.] See also BERGH, R. S. (33).

98. DUBOIS, R. Sur la spermase et l'ovulose. C.R. Soc. Biol. lii, pp. 197-199. (9 March.) [II, F, viii.]
99. —. Sur le cuivre normal dans la série animale. C.R. Soc. Biol. Paris, lii, pp. 392-394. (4 May.) [II, C, v.]
100. DUERDEN, J. E. Jamaica Fisheries. The operations in Jamaica of the Caribbean Sea Fisheries development Syndicate, Ltd. J. Inst. Jamaica, ii, pp. 608-614. (March, 1899.) [III, A, ii.]
101. —. Zoophyte collecting in Bluefields Bay. J. Inst. Jamaica, ii, pp. 619-624. (March, 1899.) [III, A, ii.]
- EASTMAN, C. R. See ZITTEL (369).
102. ECKSTEIN, K. Repetitorium der Zoologie. Ein Leitfaden für Studierende. Zweite Auflage, 8vo, viii+436 pp., 281 text-figg. Leipzig: Engelmann. (1898.) [II, E, i, d. IV, A.]
103. EDWARDS, C. L. Beschreibung einiger neuen Copepoden und eines neuen copepodenähnlichen Krebses, *Leuckartella paradoxa*. Arch. Naturg. lvii (1), pp. 75-104, pls. iii-v. (April, 1891.) [II, D, viii, b.]
104. [EDWARDS, C. L.] Variations and regeneration and *Synapta Inhaereus* [sic]. Prelim. Abstract. Science (n. s.), xi, p. 178. (2 Feb.)  
This is announced for early publication in Biometrika.
105. ENDERLE, J. Ueber eine Anthracolithische Fauna von Balia Maaden in Kleinasien. Beitr. Pal. Oesterr.-Ung. 1900, pp. 49-109, pls. iv-viii. (Sept.) [iii, B, iv, c.]
106. ENGEL, T. Zwei wieder eröffnete Fundplätze für die Grenzschichten der schwäbischen Trias-Lias-Formation. Jahresh. Ver. Württemb. lvi, pp. 238-244. [III, B, iii, d.]
107. FARQUHAR, H. On a new species of *Ophiuroidea*. Tr. N. Zealand Inst. xxxii, pp. 405, 406. (14 Aug.) [III, A, iv. IV, E.]
108. FICHEUR, E. Le Crétacé inférieur dans le massif des Matmatas (Alger). Bull. Soc. geol. France (3) xxviii, pp. 559-589. (Aug.) [III, B, iii, b, I, 2.]
109. —. Note sur quelques Échinides nouveaux de l'Aptien d'Algérie. Bull. Soc. geol. France (3) xxviii, pp. 590-596, pls. x, xi. (Aug.) [III, B, iii, b, 2. IV, C.]  
Review: by J. LAMBERT, Rev. paleozool. v, p. 40 (Jan. 1901).
- FIEDLER, K. See BERGH, R. S. (33).
110. FLEISCHMANN, A. Lehrbuch der zoologie nach morphogenetischen Gesichtspunkten. Allgemeiner Teil. 8vo, iv+192 pp., 123 text-figg. Wiesbaden: Kreidel (1897.) [II, B, i, a, I.]
111. FLICK (Commandant). Sur la présence du Priabonien (Éocène supérieur) en Tunisie. C.R. Acad. Sci. cxxx, pp. 148-150. (Jan.) [III, B, ii, f.]
112. FOERSTE, A. F. A general discussion of the Middle Silurian rocks of the Cincinnati anticlinal region, with their synonymy. Rep. Indiana Geol. xxiv, pp. 41-80. [III, B, iv, g.]
- FORTIN, R. (91) Zool. Rec. 1900. Abstract by A. TORNQUIST, N. Jahrb. Min. 1901, ii, p. -321- (Aug.).

113. [FORTIN, R.] Notes de Géologie Normande. VII, Sur une carrière de Gaillon (Eure) ouverte dans la craie sénonienne. Bull. Soc. Rouen, xxxv, pp. 261-263. (Dec.) [III, B, iii, b, 1.]  
Abstract: by J. LAMBERT, Rev. paleozool. v, p. 169 (July, 1901).
114. —. "Présente...deux Echinides fossiles,.....*Micraster corangui-num*,...*M. rostratus*." In Procès-verbal comité de géologie; séance 18 Octobre, 1899. Bull. Soc. Rouen, xxxv, p. 268. (Dec.) [III, B, iii, b, 1. IV, c.]
115. FOURTAU, R. Notes sur les Échinides fossiles de l'Égypte. 8vo, 76 pp., iv pla. Le Caire, publié par l'auteur. (Jan.)  
"La description des espèces nouvelles" par V. GAUTHIER. [III, B, ii, c, d, f; iii, b, 1. IV, c.]  
Review: by J. LAMBERT, Rev. paleozool. iv, pp. 134-135 (July, 1900).
116. —. Observations sur les terrains Éocènes et Oligocènes d'Égypte. Bull. Soc. geol. France (3), xxvii, pp. 480-491. (March.) [III, B, ii, f.]
117. —. Notes pour servir à l'étude des Echinides fossiles d'Égypte. Bull. Inst. Egypt (3), x, fasc. 2, pp. 51-58, 2 text-figg. (7 April) [II, B, i, c, 5; ii, b. III, B, ii, f. IV, c.]  
Review: by J. LAMBERT, Rev. paleozool. iv, pp. 135, 136 (July, 1900).
118. —. Note sur quelques publications paléontologiques concernant l'Égypte, parues en 1898-99. Bull. Inst. Egypt (3), vol. x, fasc. 4, pp. 135-145. (May.) [IV, c.]  
Critiques GREGORY (89) Zool. Rec. 1898.  
Abstract: by J. LAMBERT, Rev. paleozool. iv, p. 175 (Oct. 1900).
119. —. Sur la constitution géologique du massif du Gebel Galala el Baharieh (Égypte). Bull. Soc. geol. France (3), xxviii, pp. 33, 34. (June.) [III, B, ii, f; iii, b, 1.]
120. —. Sur le Cretacé du massif d'Abou-Roach (Égypte). C.R. Ac. Sci. cxxxi, pp. 629-631. (Oct.) [III, B, iii, b, 1. IV, c.]  
— See also DEPÉRET (89).
121. FOX, H. [& HINDE, G. J.] Notes on the Geology and Fossils of some Devonian rocks on the North Coast of Cornwall. Geol. Mag. (n. s.), dec. iv, vol. vii, pp. 145-152, pl. vii. (April) [III, B, iv, f.]
122. —. Geological notes. Tr. geol. Soc. Cornwall, xii, pp. 242-361, pl. xvi. (Oct.) [III, B, iv, f.]  
The plate and a good deal of the text are reprinted from (121).
123. FRAAS, E. Die Triaszeit in Schwaben. Ein Blick in die Urgeschichte an der Hand von R. Blezinger's geologischer Pyramide. 8vo, 40 pp. with text-figg. Ravensburg: O. Maier. [IV, F, *Encrinus*, Popular.]
124. FRECH, F. & ARTHABER, G. v. Ueber das Paläozoicum in Hocharmenien und Persien, mit einem Anhang über die Kreide von Sirab in Persien. Beitr. Pal. Oesterr.-Ung. xii, pp. 161-308, pls. xv-xxii, map and text-figg. 27-52. (March.) [III, B, iii, b, 1; iv, b, e. IV, c, F, H.]  
Note on *Crin.* and *Blast.* by O. JAEKEL, p. 204; by ARTHABER, pp. 285, 307.
- FRESHFIELD, D. W. See BONNEY (43).
- FRITSCH, K. v. See MERKEL (231).
- FUHRMANN, O. See DELAGE (85).

- GAUTHIER, V. See FOURTAU (115).  
 GEIKIE, A. See PEACH (260).  
 GEINITZ, E. See DEECKE (84).
125. GEMMILL, J. F. On the vitality of the ova and spermatozoa of certain animals. *J. Anat. Physiol. norm. path.* xxxiv, pp. 163-181, text-figg. [II, F, viii. III, A, i.]  
 Abstracts: in *J. R. Micr. Soc.* 1900, pp. 174, 175 (April, 1900);  
 by W. A. NAGEL, *Zool. Centrbl.* vii, pp. 383, 384 (29 May, 1900);  
 by E. A. ANDREWS, *Amer. Natural.* xxxv, pp. 56, 57 (Jan. 1901).
126. GEYER, G. Zur Stratigraphie der Gailthaler Alpen in Kärnten. *Verh. geol. Reichsanst.* 1897, pp. 114-127. (April, 1897.) [III, B, iii, e.]
127. GIARD, A. Développement des œufs d'Echinodermes sous l'influence d'actions kinétiques anormales (solutions salines et hybridation). *C.R. Soc. Biol.* lii, pp. 442-444. (18 May.) [II, F, viii.]
128. —. A propos de la parthénogénèse artificielle des œufs d'Echinodermes. *C.R. Soc. Biol.* lii, pp. 761-764. (10 Aug.) [II, F, iv; viii.]  
 —. See also ROULE (287).  
 GIARDINA, A. See HERBST (156).
129. GIESBRECHT, W. Die Asterocheriden des Golfes von Neapel und der angrenzenden Meeres-Abschnitte. *Fauna Stat. Neapel. Monogr.* xxv, see p. 199. (1899.) [II, D, viii, a.]
130. GIRTY, G. H. Preliminary Report on Paleozoic Invertebrate fossils from the region of the M'Alester coal field, Indian Territory. *Rep. U. S. Geol. Surv.* xix, pp. 539-593, pls. lxx-lxxii. (1899.) [III, B, iv, d.]
131. GLANGEAUD, P. Le Jurassique supérieur des environs d'Angoulême. *C.R. Ac. Sci.* cxxiii, pp. 1025-1027. (Dec. 1896.) [III, B, iii, c, 1.]
- GOODRICH, E. S. See BATHER (19).
132. GORDON, M. M. O. On the Fauna of the Upper Cassian zone in Falzarego Valley, South Tyrol. *Geol. Mag. (n. s.)*, dec. iv, vol. vii, pp. 337-349. (Aug.) [III, B, iii, e.]  
 —. See also OGILVIE-GORDON, M. M. (249).
- GOTO, S. See MACBRIDE (214).
133. GRANT, C. C. Geological Notes. *J. Hamilton Ass.* xii, pp. 140-145. (1896.) [II, E, i, c. III, B, iv, g.]
134. —. List of local fossils not previously reported in the *Journal of Proceedings*. *J. Hamilton Ass.* xiii, pp. 128-136. (1897.) [III, B, iv, g.]
135. GRAVE, C. *Ophiura brevispina* (with note by W. K. BROOKS). *Mem. Ac. Washington*, viii, Fourth memoir, pp. 79-100, pls. i-iii [in state of proofs before letters]. (Nov. 1899.) Also issued as Doctoral dissertation, with altered title, lettered plates, and corrections: *Mem. Biol. Lab. Johns Hopkins Univ.* iv, 5. (Oct.) [II, c, vii: D, iii, e; iv; v, c; vi; viii, e: E, i, b: F, iv; v, e, f; vi, e, 2, 6, 7, 9. III, A, ii. IV, E.]  
 p. 96, line 11 from end, "bivium" and "trivium" transposed;  
 Author's correction *in litt.*  
 Abstract: by H. LUDWIG, *Zool. Centrbl.* viii, pp. 319, 320 (21 May, 1901).  
 —. See also ROULE (287).

- GREGORY, J. W. (111) Zool. Rec. 1899. Abstracts: by A. TORNGUIST, N. Jahrb. Min. 1900, ii, pp. 486-488 (Dec.); by H. LUDWIG, Zool. Centrbl. vii, pp. 493, 494 (24 July, 1900); by J. LAMBERT, Rev. paleozool. v, pp. 121, 122 (April, 1901).—(112) Zool. Rec. 1899. Abstract by J. LAMBERT, Rev. paleozool. v, p. 122 (April, 1901).
136. —. On the Geology and fossil Corals and Echinids of Somaliland. Quart. J. Geol. Soc. lvi, pp. 26-45, pls. i, ii, 5 text-figg. (15 Feb.)  
[III, B, ii, f; iii, c, 3. IV, c.]  
Prelim. Abstract: Proc. Geol. Soc. for 6 Dec. 1899, pp. 16, 17.  
Abstract: by J. LAMBERT, Rev. paleozool. iv, pp. 132, 133 (July, 1900).
137. —. *Zeuglopleurus rowei*, n. sp., Appendix A. to ROWE, A. W. (288) Zool. Rec. 1900. P. Geol. Ass. xvi, pp. 353, 354, text-fig. (19 March.)  
[III, B, iii, b, 1. IV, c.]  
— See also BATHER (19), FOURTAU (118).
138. GREPPIN, E. Description des fossiles du Bajocien supérieur des environs de Bâle. 3 partie. Abh. Schweiz pal. Ges. xxvii, pp. 127-210, pls. xiii-xx. (1900.) [? April 1901.] [III, B, iii, c, 3. IV, c.]
139. GRIEG, J. A. Die Ophiuriden der Arktis. Fauna Arctica, vol. i, Lief. 2, pp. 259-286. (Jena.)  
[II, B, ii, c; d, 1: D, iii, e: E, iii: F, iv; vii, e. III, A, i, v. IV, E.]  
Abstract by H. LUDWIG, Zool. Centrbl. viii, p. 273 (7 May, 1901).
140. —. Animal life [of Norway]. Norway: Official publication for the Paris Exhibition, 1900, pp. 70-78, 8vo, Paris. [III, A, ii.]  
GRIFFIN, L. E. See HARRINGTON (152).
141. GRIFFITHS, A. B. Sur la matière colorante d'*Echinus esculentus*. C.R. Ac. Sci. cxxxi, pp. 421, 422. (13 Aug.) [II, c, v.]  
Note in Nature, lxii, p. 408 (23 Aug. 1900).  
Abstract: J. R. Micr. Soc. 1901, p. 161 (April, 1901).
142. GRÖNWALL, K. A. Några anmärkningar om lagerserien i Stevns Klint. Geol. Foren. Stockholm Forh. xxi, pp. 365-373, text-fig. (1899.) [III, B, iii, b, 1.]  
Criticism of HENNIG (119) Zool. Rec. 1899.
143. —. Smånotiser om Jyllands Krita. Medd. Dansk Geol. For. v, pp. 65-72. (June, 1899.) [II, B, ii, a. III, B, iii, b, 1.]
144. —. Borrade ekinidtaggar från Danmarks Krita. Medd. Dansk Geol. For. vi, pp. 33-36, text-fig. (Sheet dated May, vol. issued Nov.) [II, D, viii, c. III, B, iii, b, 1.]  
Abstracts: (full) by Author, entitled "Von Organismen angebohrte Seeigelstacheln der Kreidezeit." Centrbl. Min. 1901, pp. 73-75, text-fig. (10 Feb.); by A. JESSEN, Geol. Centrbl. i, p. 603 (1 Oct. 1901).
145. GROSSOUVRE, A. DE. Sur la limite du crétacé et du tertiaire. Bull. Soc. geol. France (3), xxv, pp. 57-80, with remarks by H. DOUVILLÉ & MUNIER CHALMAS, pp. 80, 81. (Feb. ? 1897.)  
[III, B, ii, f; iii, b, 1.]
146. GUERICH, G. Nachträge zum Paläozoicum des Polnischen Mittelgebirges. N. Jahrb. Min. Beil.-Bd. xiii, pp. 331-388, pls. xiv, xv, 8 text-figg. (March.) [III, B, iv, f, g, h.]
147. GUNN, W. The Geology of Belford, Holy Island, and the Farne Islands, Northumberland. Fossils from the Lower Carboniferous rocks, by G. SHARMAN & E. T. NEWTON. Mem. Geol. Surv. U. K. (Explan. sheet 4, n. s.), iv + 156 pp. [III, B, iv, e.]
- HAHN, G. See QUINTON (275), VERNON, H. M.



148. HAMANN, O. Echinodermen (Stachelhäuter). III Klasse Ophiuroidea, Schlangensterne. Bronn's Klassen und Ordnungen des Tierreichs, ii, Abth. 3, Lief. 29, pp. 745-808, pls. i-iii. (June.) Lief. 33-36, pp. 809-872, pls. v-viii. (Sept.) [II, B, i, a, 3; e, 3, 5-12; ii, c; E, iii, iv: F, ii; iii; iv: v, e; vi, e, 2, 5, 6, 7, 9. IV, A, E.]
149. HAMMAR, J. A. H. Ist die Verbindung zwischen den Blastomeren wirklich protoplasmatisch und primär? Arch. mikr. Anat. IV, pp. 313-336, pl. xix. (5 Feb.) [II, E, i, b: F, iv.]  
Abstracts: for technique by E. SCHÖBEL, Zeitschr. wiss. Mikr. xvii, p. 54 (May, 1900); by E. A. A[NDREWS], Amer. Natural. xxxv, p. 55 (Jan. 1901).
150. HARMER, F. W. On the Pliocene deposits of Holland and their relation to the English and Belgian Craggs, with a Suggestion for the Establishment of a new Zone, "Amstelian," and some remarks on the geographical conditions of the Pliocene Epoch in Northern Europe. Quart. J. Geol. Soc. lii, pp. 748-782, pls. xxxiv, xxxv. (Nov. 1896.) [III, B, ii, c.]
151. —. Les dépôts tertiaires supérieurs du bassin anglo-belge. Bull. Soc. Belge Geol. x, Mem., pp. 315-344, i pl., 4 text-figg. (Feb. 1898.) [III, B, ii, c.]
152. †HARRINGTON, N. R. "Report on the Echinoderms, Crustaceans and Annelids" "of the Columbia University Expedition to Puget Sound." [Abstract in Report of N. York Acad. Sci. biol. Sect.] Science (n. s.), iv, p. 961. (25 Dec. 1896.) Also Zool. Anz. xx, p. 14 and Anat. Anz. xiii, p. 95. (Jan. 1897.) [II, B, i, c, 2: D, iii, c; vi; viii, b.]  
In some respects this is a Preliminary Abstract of HARRINGTON & GRIFFIN (124) Zool. Rec. 1897.
153. HARTLAUB, C. Zoologische Ergebnisse einer Untersuchungsfahrt des deutschen Seefischerei-Vereins nach der Bäreninsel und Westspitzbergen ausgeführt im Sommer 1898 auf S.M.S. "Olga." I Teil. Einleitung. Wiss. Meeresuntersuch. (n. s.) iv, pp. 171-193, i map. [III, A, v.]  
— Uebersicht der an den verschiedenen Stationen der Olga-Reise gefangenen Echinodermen. See DOEDERLEIN, L. (93).
- HASWELL, W. A. See PARKER, T. J. & HASWELL, W. A. (258).
154. HATCHER, J. B. Sedimentary rocks of Southern Patagonia. Amer. J. Sci. (4), ix, pp. 85-108, pl. i. (Feb.) [III, B, ii, d.]
155. HEIDER, K. Das Determinationsproblem. Verh. Deutsch. zool. Ges. 1900, pp. 45-97. [II, F, viii.]  
HENNIG, A. See GRÖNWALL (142).
156. HERBST, C. Ueber das Auseinandergehen von Furchungs- und Gewebezellen in kalkfreiem Medium. Arch. Entwicklmech. ix, pp. 424-463, pls. xviii, xix. (20 Feb.) [II, F, viii.]  
Abstracts: by E. A. A[NDREWS], Amer. Natural. xxxv, p. 54 (Jan. 1901); by R. S. BERGH, Zool. Centrbl. vii, pp. 862, 863 (11 Dec. 1900); by A. GIARDINA, Rivista Biol. general. iii, p. 132 (Feb. 1901).
157. HERDMAN, W. A. The fourteenth annual Report of the Liverpool Marine Biology committee, and their Biological station at Port Erin (Isle of Man). 8vo, 68 pp., vii pls. and text-figg., Liverpool. (Dec., also to be re-issued in P. Liverpool biol. Soc. xv.) [II, D, iii, a. III, A, ii.]  
— See also CHADWICK (60).

- HÉROUARD, E. (121) Zool. Rec. 1899. Abstract by H. LUDWIG, Zool. Centrbl. vii, p. 436 (26 June, 1900).
158. HERTWIG, O. Experimentelle Studien am tierischen Ei vor, während und nach der Befruchtung. Jena. Zeitschr. xxiv, pp. 268–313, pls. viii–x. (26 Mar. 1890.) [II, F, viii.]  
Not now indexed in detail, but since it is not previously recorded one may give the heads of the Chapters: 1. Ueberreife der Eier und Erscheinungen, die hierdurch veranlasst werden. 2. Verhalten der Geschlechtsprodukte gegen Kälte. 3. Färbung der lebenden Zellsubstanz durch Methylenblau. 4. Parthenogenese bei Seesternen. The usual Echinoderm species furnished the material.
159. HESSE, E. K. Die Mikrostruktur der fossilen Echinoideenstacheln und deren systematische Bedeutung. N. Jahrb. Min. Beil.-Bd. xiii, pp. 185–264, pls. xii, xiii. (March.) [II, B, i, c, 4; E, i, b. IV, c.]  
Abstract: by H. LUDWIG, Zool. Centrbl. viii, p. 390 (2 July, 1901).
- HINDE, G. J. See FOX (121).
- HOLLAND, R. See NEWTON (242).
160. HOLMES, J. A. The deep Well at Wilmington, N. C. Science (n. s.), xi, pp. 128–130. (26 Jan.) [III, B, iii, b, 1.]
161. HORST, R. "Spreek over autotomie en herstellingsvermogen bij Echinodermen." Tijdschr. Nederland. Dierk. Ver. (2) vi, Versl., p. xxx. (Dec.) [II, D, vii.]
162. —. "Demonstreert een exemplaar van...*Chiridota dunedinensis* Parker." Tijdschr. Nederland. Dierk. Ver. (2) vi. Versl., pp. lxxiii–lxxiii. (Dec.) [II, D, vi.]
163. HOUSSAY, F. La forme et la vie. Essai de la méthode mécanique en zoologie. 8vo, vi+924 pp., 782 text-figg. Paris: Schleicher. [II, A, i: B, i, a–f, I: F, v, a; vi, a, 7, 10.]
164. H[OWES], G. B. Walter Percy Sladen. Nature, lxii, pp. 256, 257. (12 July.) [II, E, iv.]
165. H[UBRECHT], A. A. W. The cruise and deep-sea exploration of the "Siboga" in the Indian Archipelago. Nature, lxii, pp. 327, 328, 2 text-figg. (2 Aug.) [II, D, vii; viii, d.]
166. HUENE, F. v. (BARON HOYNINGEN-HUENE). Geologische Beschreibung der Gegend von Liestal im Schweizer Tafeljura, an Hand von Blatt 30 des Siegfriedatl. Verh. Ges. Basel, xii, pp. 293–372, pls. v, vi. [III, B, iii, c, 2, 3.]
- JAEKEL, O. (130) Zool. Rec. 1899. Abstract by H. LUDWIG, Zool. Centrbl. xii, pp. 429–433 (26 June, 1900).
167. —. [Referat ueber] F. A. BATHER: The *Crinoidea* of Gotland. Part I. [(11) Zool. Rec. 1893.] N. Jahrb. Min. 1895, ii, pp. 371–374. (1895.)
168. —. Ueber einen neuen Pentacrinoideen-Typus aus dem Obersilur. Zeitschr. Deutsch. geol. Ges. lii, pp. 480–487, text-figg. (Dec.) [II, A, iii: B, i, f, 5; ii, e. III, B, iv, g. IV, F.]  
— See also BATHER, F. A., FRECH (124).
- JAHN, J. J. See BATHER (21).
169. JUKES-BROWNE, A. J. The Gault and Upper Greensand of England. Mem. geol. Surv. U. K. Cretaceous rocks of Britain, vol. i, xiv+499 pp., ii maps. [III, B, iii, 1.]
- KAYSER, E. See SCHLUETER (298).



- KEILHACK, K. See WOLFF (360).
- KERFORNE, F. (135) Zool. Rec. 1899. Abstract by L. B., Bull. Soc. Ouest France, x, pp. 40-43 (Sept. 1900).
- KEYES, C. R. See KLEM (173).
170. KILIAN, W. & LORY, P. Notices géologiques sur divers points des Alpes françaises. Servant de complément au Livret-Guide des Excursions du 8<sup>e</sup> Congrès Géologique International (1900). 8vo, 84 pp., 7 text-figg., Grenoble. Reprinted in Bull. Soc. Isère, xxxi, pp. 479-557 (1900), also in Trav. Lab. geol. Grenoble, v, pp. 557-635. (1901.) [II, D, x. III, B, iii, b, I, 2; c, I.]
- KING, HELEN D. (114) Zool. Rec. 1898. Abstract by R. S. BERGH, Zool. Centrbl. viii, pp. 89-91 (26 Feb. 1901).
171. —. Further studies on regeneration in *Asterias vulgaris*. Arch. Entwicklmech. ix, pp. 724-737, 19 text-figg. (22 May.) [II, B, i, d, 2; ii, d, 1: D, vii.]  
Abstract: by R. S. BERGH, Zool. Centrbl. viii, pp. 89-91 (26 Feb. 1901).
172. +KIRKBY, J. W. On the Occurrence of Carboniferous Limestone fossils at Viewforth, near Largo, Fife. Tr. Edinb. geol. Soc. vii, pp. 488-493, pl. xxviii. (Dated 1899, received in London 23 July, 1900.) [III, B, iv, e.]
- KIRWAN, C. DE. See ACLOQUE (2).
173. KLEM, MARY. The development of *Agaricocrinus*. Tr. Ac. St. Louis, x, pp. 167-184, pls. xviii-xxi. (30 May.) [II, B, ii, b; d, 2: c, vi: D, vii: F, vii, f. III, B, i. IV, F.]  
Review: by C. R. KEYES, Amer. Geol. xxvi, p. 60 (July, 1900).  
Abstracts: J. R. Micr. Soc. 1901, p. 161 (April, 1901); by T. W. STANTON, Geol. Centrbl. i, p. 383 (15 June, 1901).
174. KNIGHT, W. C. Jurassic rocks of Southeastern Wyoming. Bull. Geol. Soc. Amer. xi, pp. 377-388, pl. xxiii. (31 May.) [III, B, iii, c.]
175. KNĚPOVĚCH (KNIPOWITSCH), N. Kratkiĭ obzor rabot ěkspeditsiĭ dlya nauchnopromĭsllov'ikh izslyedovanĭĭ Murmana (Revue sommaire des travaux de l'expédition pour l'étude scientifique et industrielle du Mourmane). Bull. Ac. St. Petersb. (5) xii, pp. 419-469. (May.) [III, A, v.]
176. —. Zur Kenntniss der geologischen Geschichte der Fauna des Weissen und des Murman-Meeress. Verh. russ. min. Ges. (2) xxxviii, pp. 1-169, map and table. (Oct.) [III, B, ii, b.]
177. KOPY, F. Notice stratigraphique sur l'Oxfordien dans la partie septentrionale du Jura Bernois. Abh. Schweiz. pal. Ges. xxvi, pp. 189-220. (1899.) [III, B, iii, c, 2.]  
Abstract: by SCHARDT & SARASIN, Eclog. geol. Helvet. vi, pp. 429-432 (Sept. 1900).
178. KOCH, A. Die Tertiärbildungen des Beckens der siebenbürgischen Landestheile. II. Neogene Abtheilung. 8vo, 370 pp., iii pls., 15 text-figg. Ungar. geol. Gesell. Budapest. [III, B, ii, d.]
179. KOEHLER, R. Illustrations of the shallow-water *Ophiuroidea* collected by the Royal Indian Marine Survey Ship Investigator. (*Echinoderma* of the Indian Museum, *Ophiuroidea*.) With Editorial note by A. ALCOCK. Folio, vi+4 pp., viii pls., numbered xv-xxii. The Indian Museum, Calcutta. [III, A, iii. IV, E.]  
The descriptions of the species were given in KOEHLER (118, 121), Zool. Rec. 1898.

180. [KOEHLER, R.] Note préliminaire sur les Échinides et les Ophiures de l'Expédition antarctique belge. Bull. Ac. Belgique (3), xxxviii, pp. 814-820. (Dec.) [III, A, vi. IV, C, E.]  
Abstract: by H. LUDWIG, Zool. Centrbl. viii, p. 274 (7 May, 1901).
181. —. Les Échinides et les Ophiures de l'Expédition antarctique belge. C.R. Ac. Sci. cxxxi, pp. 1010-1012. (20 Dec.) [III, A, i, vi.]  
Abstract: by H. LUDWIG, Zool. Centrbl. viii, p. 274 (7 May, 1901).  
KOFOID, C. A. See VERNON, H. M. (and 337).
182. KOKEN, E. Ueber triassische Versteinerungen aus China. N. Jahrb. Min. 1900, i, pp. 186-215, pls. ix, x and 3 text-figg. (May.) [III, B, iii, e. IV, F.]
183. KORNHUBER, A. Der Thebener Kobel. Ein Beitrag zu seiner Naturgeschichte. Verh. Ver. Presburg (n. s.), x, pp. 57-97. (1899.) [III, B, ii, d.]
184. KOSSMAT, F. Die Triasbildungen der Umgebung von Idria und Gereuth. Verh. geol. Reichsanst. 1898, pp. 86-104, 2 text-figg. (March ? 1898.) [III, B, iii, e.]  
KUEKENTHAL, W. See MARENZELLER (221), PFEFFER (267).
185. KUSNETZOW, I. D. Fischerei und Thiererbeutung in den Gewässern Russlands. 8vo, vi+120 pp. St Petersburg. Dept. für Landwirthschaft. (1898.) [II, E, ii.]  
LAMBERT, J. (180) Zool. Rec. 1897. Abstract, Bull. Soc. Belge Geol. xi, procès-verb. pp. 127, 128 (Feb. 1901).
186. —. Sur les Échinides de la faune Coralligène du Vésulien de Saint-Gaultier (Indre), recueillis par M. E. Benoist. Bull. Soc. geol. France (3), xxviii, pp. 473-489, pl. viii. (Aug.) [II, A, iii : B, ii, b ; d, 2 : F, vii, c. III, B, iii, c, 3. IV, C.]  
Abstracts: by C. BARROIS, Geol. Centrbl. i, p. 153 (1 March, 1901); by J. LAMBERT, Rev. paleozool. v, pp. 39, 40 (Jan. 1901).
187. —. Étude sur quelques Échinides de l'Infra-Lias et du Lias. Bull. Soc. Yonne, liii, 1<sup>er</sup> semestre, pt. 2, pp. 3-57, pl. i, tabb. A, B. (Jan.) [II, A, iii : B, i, c, 5. III, B, iii. IV, B (*Prophymosoma*), C.]  
Abstract: by J. LAMBERT, Rev. paleozool. iv, pp. 176-178 (Oct. 1900).  
— See also AIRAGHI (3, 4, 5), BATHER (19, 21), BEEDE (28), FICHEUR (109), FORTIN (113), FOURTAU (115, 117, 118), GREGORY, J. W. (also 136), LORIOI (207), MERRIAM, J. C., OPPENHEIM (251), RIAZ (281), SCHLUETER (298, 299).
188. LAMEERE, A. Manuel de la Faune de Belgique, tome i, Animaux non Insectes. 4to. (17.5 x 12 cm.), xl+640 pp., 1 map, 701 text-figg. Bruxelles: Lamertin. (1895.) [III, A, ii. IV, B, C, D, E.]  
Échinodermes, pp. 30-37.
189. —. Rapport sur l'excursion de la Société Royale Malacologique de Belgique au Zwijn. Ann. Soc. malac. Belgique, xxix, pp. 16-24. (10 July, 1896.) [III, A, ii.]
190. LANG, A. Ueber den Einfluss der festsitzenden Lebensweise auf die Thiere und über den Ursprung der ungeschlechtlichen Fortpflanzung durch Theilung und Knospung. 8vo, iv+166 pp. Jena: Fischer (1888.) [II, A, i.]
191. LANKESTER, E. RAY. A treatise on Zoology edited by E. R. L. Part II. Chapter II. The Enterocoela and the Coelomocoela. 37 pp., 17 text-figg. London: Black. (Sept.) [II, B, i, a, 2, 7.]  
— See also BATHER (19).

192. LEBEDEW, N. Uebersicht der geologischen Sammlungen des Kaukasischen Museums. Mt. Kaukas. Mus. i, Lief. 2. 39 pp. (1897.) [II, E, i, c. III, B, iii, b, I, 2; c, I.]
193. LE DANTEC, F. L'équivalence des deux sexes dans la fécondation. Rev. gen. Sci. x, pp. 854-863. (1899.) [II, F, viii.]
194. —. Noyaux excitables et milieux excitants. C.R. Soc. Biol. lii, pp. 43, 44. (26 Jan.) [II, F, viii.]  
A criticism of DELAGE (87) Zool. Rec. 1899.
195. LISSAJOUS, M. Crinoides des environs de Mâcon. Bull. Soc. Hist. Nat. Macon, Nos. 16, 17, pp. 1-27, pls. i-iii. (Dec.) [II, B, ii, d, I: D, viii, f: E, i, c. III, B, iii, c, d. IV, F.]
196. LIVERSIDGE, A. The blue pigment in Coral (*Heliopora coerulea*) and other animal organisms. J. R. Soc. N. S. Wales, xxxii, pp. 256-268. (1899.) [II, c, v.]  
LOEB, J. (152) Zool. Rec. 1899. Abstract in Rev. Sci. (4), xiii, p. 727 (9 Juin, 1900).—(152A) Zool. Rec. 1899. Abstr. by — STORCH, Zeitschr. Sinnesorgane, xxi, pp. 446-449 (1899).
197. —. On ion-proteid compounds and their rôle in the mechanics of life phenomena.—The poisonous character of a pure NaCl solution. Amer. J. Physiol. iii, pp. 327-338. (1 Feb.) [II, c, vii: F, viii.]
198. —. On the different effect of ions upon myogenic and neurogenic rhythmical contractions and upon embryonic and muscular tissue. Amer. J. Physiol. iii, pp. 383-396. (1 March.) [II, F, viii.]
199. —. On the artificial production of normal larvae from the unfertilized eggs of the Sea Urchin (*Arbacia*). Amer. J. Physiol. iii, pp. 434-471. (1 April.) [II, F, viii.]  
Abstract: by R. S. BERGH, Zool. Centrbl. vii, pp. 549-551 (14 Aug. 1900).
200. —. On the nature of the process of fertilization. Biol. Lectures Woods Holl, 1899, pp. 273-282.  
Summarizes and draws conclusions from LOEB (199).
201. —. On artificial Parthenogenesis in Sea Urchins. Science (n. s.), xi, pp. 612-614. (20 April.) Correction in Science (n. s.), xi, p. 1030 (29 June.) [II, F, viii.]  
Abstract: by R. S. BERGH, Zool. Centrbl. vii, pp. 549-551 (14 Aug. 1900).
202. —. Further experiments on artificial parthenogenesis and the nature of the process of fertilization. Amer. J. Physiol. iv, pp. 178-184. (1 Aug. 1900.) [II, F, viii.]  
Abstract: by R. S. BERGH, Zool. Centrbl. vii, p. 868 (11 Dec. 1900). Review: Rev. gen. Sci. xi, p. 1295 (15 Dec. 1900).
203. —. Artificial parthenogenesis in Annelids (*Chaetopterus*). Science (n. s.), xii, p. 170. (3 Aug.) [II, F, viii.]  
Prelim. Abstract of a paper published in Amer. J. Physiol. 1 Jan. 1901.  
— See also NORMAN (247).
204. LOERENTHEY, E. Jelentés az erdélyi Múzeumegylet megbízásában 1891, nyarán tett földtani kirándulásainak eredményeiről. [Report to the Committee of the Transylvanian Museum on the results of my geological excursions in the summer of 1891.] Ert. Erdel. Muz. ii, vol. xv, pp. 55-68, with abstract under title: Bericht über die Resultate meiner geologischen Excursionen im Sommer 1891, tom. cit. pp. 100-102. (1893.) [III, B, ii, d.]

205. LOGAN, W. N. The stratigraphy and invertebrate faunas of the Jurassic formation in the Freeze-out hills of Wyoming. Kansas quart. ix, pp. 109-134, pls. xxv-xxxi. (April.) [III, B, iii, c. IV, F.]
- LORIOLO, P. DE. (154) Zool. Rec. 1899. Abstract by A. TORNUST, N. Jahrb. Min. 1900, ii, p. -486- (Dec. 1900).—(155) Zool. Rec. 1899. Abstract by G. MAAS, Geol. Centrbl. i, p. 28 (1 Jan. 1901).
206. —. Étude sur les Mollusques et Brachiopodes de l'Oxfordien inférieur ou zone à *Ammonites renggeri* du Jura Bernois. 2<sup>me</sup> partie. Abh. Schweiz. pal. Ges. xxvi, pp. 119-187, pls. viii-xii. (1899.) [III, B, iii, c, 2.]  
Abstract by SCHARDT & SARASIN, Eclog. geol. Helvet. vi, pp. 428, 429 (Sept. 1900).
207. —. Notes pour servir à l'étude des Échinodermes, VIII. Rev. Suisse Zool. viii, pp. 55-96, pls. vi-ix. (June?) [II, F, vii, e. III, A, ii, iii, iv : B, iii, b, I, 2 ; iii, c, 3. IV, C, D, E, F.]  
Abstracts : by J. LAMBERT, Rev. paleozool. iv, pp. 173, 174 (Oct. 1900); by H. LUDWIG, Zool. Centrbl. vii, p. 493 (24 July, 1900); by A. TORNUST, N. Jahrb. Min. 1901, ii, p. -321- (Aug.).
- LORY, P. See KILIAN (170).
208. LUCAS, F. A. Blue Fox trapping on the Pribilof Islands. Science (n. s.), xi, pp. 125-128. (26 Jan.) [II, D, ix.]
- LUDWIG, H. (157) Zool. Rec. 1899. Abstract in LUDWIG (211).—(159) Zool. Rec. 1899. Abstracts by H. LUDWIG (211) and Zool. Centrbl. vii, pp. 433, 434 (26 June, 1900).
- . Die Holothurien [der "Olga" Untersuchungsfahrt]. See DOEDERLEIN, L. (93).
209. —. Arktische und subarktische Holothurien. Fauna Arctica, vol. i, lief. i, pp. 135-178. (Jena, Feb.) [II, B, ii, e ; iii, c : D, iii, b : E, iii. III, A, v. IV, B.]  
Abstract : by H. LUDWIG, Zool. Centrbl. vii, pp. 495, 496 (24 July, 1900).
210. —. Arktische Seesterne. Fauna Arctica, vol. i, lief. iii, pp. 447-502. (Jena.) [II, B, ii, c, d, I, 2 ; iii, c : D, iii, d : E, iii. III, A, v. IV, D.]  
Abstract : by H. LUDWIG, Zool. Centrbl. viii, pp. 271, 272 (7 May, 1901).
211. —. Echinoderma. Zool. Jahresber. for 1899. (Sept. 1900.) [II, E, iii.]  
Gives Literature for 1899, and Abstracts of: BORDAS (43, 44), CLARK (56), DOEDERLEIN (78), DRIESCH (80), FISCHER (88), GRAVE (110), GREGORY (111), JAEKEL (130), LOEB (152A), LUDWIG (157, 159), MACBRIDE (165), MORGAN (178), RUSSO (203, 204), SOLLAS (216), STRICHT (225A), UEXKULL (234), VERNON (240), VERRILL (243, 244) in Zool. Rec. 1899.
- . See also BATHER (19), BEDFORD, F. P., BOSSHARD (44), CHUN (63), DOEDERLEIN (93), GRAVE (135), GREGORY, J. W., GRIEG (139), HÉROCARD, E., HESSE (159), JAEKEL, O., KOEHLER (180, 181), LORIOLO (207), MEISSNER (229), PERRIER (263, 264), RITTER (283), RUSSO (292, 293), SPANDEL (313), STUART (325), VERRILL, A. E. (and 341).
212. +LUNDGREN, B. Studien öfver fossilförande lösa block. Geol. Foren. Stockholm Forh. xiii, pp. 111-121. (Feb. 1891.)  
No. 9. Om ett krinoidförande block från Limhamn. (Studies on loose fossiliferous blocks. No. 9. On a block with crinoids from Limhamn.) [III, B, ii, f.]

- MAAS, G. See LORIOL, P. DE & SCHLUTER (299).
- MACBRIDE, E. W. (165) Zool. Rec. 1899. Abstract in LUDWIG (211).
213. —. The rearing of Larvae of *Echinidae*. In Report of the Committee on Investigations made at the Marine Biological Laboratory, Plymouth. Rep. Brit. Ass. lxix, pp. 438-440. (Jan.) Preliminary to MACBRIDE (215).
214. —. Notes on Asterid development. No. 2. The development of the coelom in *Asterina gibbosa*. Zool. Anz. xxiii, pp. 98-104, text-figg. (19 Feb.) [II, F, vi, d, 2, 6, 7.] Largely a criticism of GOTO (82) Zool. Rec. 1898.
215. —. Notes on the rearing of Echinoid Larvae. J. Mar. Biol. Ass. (n. s.), vi, pp. 94-97. (July, 1900.) [II, E, b : F, v, c.] Abstract: J. R. Micr. Soc. 1900, p. 588 (Oct. 1900).
216. MCINTOSH, W. C. The Resources of the Sea as shown in the scientific experiments to test the effects of trawling and of the closure of certain areas off the Scottish shores. 8vo, xvi + 248 pp., with tables, plates, and text-figg. London: Clay. (1899.) [II, E, ii.]
217. MAITLAND, A. G. The mineral wealth of Western Australia. Preliminary issue. Bull. Geol. Surv. W. Australia, No. 4, 150 pp., vi pls. Perth. (1900.) [III, B, iv, e.]
218. MALAISE, C. Note préliminaire sur la constitution de la bande Silurienne de Sambre-et-Meuse. Bull. Ac. Belgique (3), xxxiii, pp. 803-809. (1897.) [III, B, iv, h.]
219. —. État actuel de nos connaissances sur le Silurien de Belgique. Ann. Soc. geol. Belgique, xxv bis, pp. 179-216 (7 Sept.). Abstract in Bull. Soc. Belge Geol. xiv, Proc. Verb. pp. 270-280. (Dec.) [III, B, iv, g, h.]
220. MALARD, A. E. Influence de la lumière sur la coloration des crustacés. Bull. Soc. Philom. (8) iv, pp. 24-30. (1892.) Translated as "The influence of light on the coloration of Crustaceans." Ann. Nat. Hist. (6) xi, pp. 142-149. (Feb. 1893.) [II, B, ii, c : D, viii, f.]
221. MARENZELLER, E. VON. Holothurien [von Ternate], in Ergebn. einer zool. Forschungsreise in den Molukken und Borneo..... von W. KÜKENTHAL. Abb. Senckenb. Ges. xxv, p. 86. [III, A, iii.]
222. MARIANI, E. Fossili del Giura e dell' Infracretaceo nella Lombardia. Atti Mus. Milano, xxxviii, pp. 367-448, with 1 pl. and 9 text-figg. (March.) [III, B, iii, c, I.] Abstract: by M. CANAVARI, Riv. ital. Pal. vi, pp. 8-10 (31 March, 1900).
223. —. Nuove osservazioni geologiche e paleontologiche sul gruppo della Presolana e sulla Cima di Camino. Rend. Ist. Lombardo, xxxiii, pp. 1249-1260. [III, B, iii, e.]
224. MARIANI, M. Fossili miocenici del Camerinese. Riv. ital. Pal. vi, pp. 95-97. (30 June.) [III, B, ii, d.]
225. \*MARSHALL, W. Die deutschen Meere und ihre Bewohner. Kleine Ausgabe. 8vo, v + 394 pp., text-figg. Leipzig: Tietmayer. (1897.) [III, A, ii.] Abstract of MARSHALL (217) Zool. Rec. 1897.
226. MATHEWS, A. P. Some ways of causing Mitotic Division in unfertilized *Arbacia* Eggs. Amer. J. Physiol. iv, pp. 343-347. (1 Nov.) [II, F, viii.] Abstract: Science (n. s.), xii, p. 882 (7 Dec. 1900).

227. MATOUSCHEK, F. Kurze Notiz ueber die in der Ablagerung des ehemaligen Kummerner See's nächst Brüx aufgefundenen turonen Petrefacten. SB. Ver. Lotos (Prag), n. s., xvii, pp. 72-75. (1897.)  
[III, B, iii, b, 1.]
228. MEAD, A. D. On the Correlation between growth and food supply in Starfish. Amer. Natural. xxxiv, pp. 17-23, 2 text-figg. (Jan.)  
[II, D, iv, vii : F, iv ; vii, d.]  
Abstract : Rev. Sci. (4), xiii, pp. 473, 474 (14 April, 1900).
229. MEISSNER, M. Echinoideen. Hamburger Magalhaensische Sammelreise, Lief. v, Art. 1, pp. 1-18, 1 text-fig. (Dec.)  
[II, B, ii, a, c ; d, 2 : E, iii. II, B, vi. IV, c.]  
Abstract : by H. LUDWIG, Zool. Centrbl. viii, p. 274 (7 May, 1901).
230. MELI, R. Osservazioni sul *Pecten (Macrochlamys) Ponsii* Meli e confronti con alcune forme di Pectinidi neogenici affini che vi si collegano. Boll. Soc. geol. Ital. xviii, pp. 324-353 ; also "Errata—corrige," p. 514, footnote 1. (15 Feb.)  
[III, B, ii, c. IV, c (*Clypeaster*).]
231. MERKEL, O. & FRITSCH, K. v. Der unteroligocäne Meeressand in Klüften des Bernburger Muschelkalkes. Zeitschr. Naturw. lxx, pp. 61-78. (Sept. 1897.) "Die thierischen Reste in den Klüften" von K. v. FRITSCH. [III, B, ii, e.]
- MERRIAM, J. C. (175) Zool. Rec. 1899. Review by J. LAMBERT, Rev. paleozool. v, pp. 122, 123 (April 1901). [See iv, c, *Scutella*, *Echinarachnius*.] Abstract by A. TORNUST, N. Jahrb. Min. 1901, ii, p. -324- (Aug.).
- MIEG, —. See BLEICHER (40).
- MILLOSEVICH, F. See ANGELIS D'OSSAT (16).
- MINCHIN, E. A. See BATHER (19).
232. MOERICKE, W. Versteinerungen der Tertiärformation von Chile. (Beiträge zur Geologie und Paläontologie von Süd-Amerika. Herausgegeben von G. STEINMANN. IV. Die Tertiärbildungen des nördlichen Chile und ihre Fauna von MÖRCKE und G. STEINMANN.) N. Jahrb. Min. Beil.-Bd. x, pp. 548-612, pls. xi-xiii. (Dec. 1896.)  
[III, B, ii.]
- MONKE, H. See SPANDEL, E.
233. MORENA, T. Il sinemuriano negli strati a *Terebratula aspasia* Meneghini. Boll. Soc. geol. Ital. xvi, pp. 183-186. (6 July, 1897.) Also published separately as: Il sinemuriano.....*aspasia* dell' Appennino centrale. 8vo, 10 pp., Cagli, 1897.  
[II, D, x. III, B, iii, d. IV, c.]  
Abstract : Boll. com. geol. Ital. xxx, pp. 73, 74 (Aug. 1899).
234. —. Le formazioni Eoceniche e Mioceniche fiancheggianti il gruppo del Catria nell' Appennino Centrale. Boll. Soc. geol. Ital. xviii, 471-483. (15 Feb.) [III, B, ii, d.]
- MORGAN, T. H. (178) Zool. Rec. 1899. Abstract in LUDWIG (211).
235. —. Further studies on the action of salt-solutions and of other agents on the eggs of *Arbacia*. Arch. Entwicklmech. x, pp. 489-524, 14 text-figg. (25 Sept.) [II, F, viii.]  
Prelim. abstract of part in Science (n. s.), xi, pp. 178-180 (2 Feb. 1900), under title: "The effect of strychnine on the unfertilized eggs of the sea-urchin." Abstracts : J. applied Micr. iii, p. 945 (1900); by R. S. BERGH, Zool. Centrbl. viii, pp. 222, 223 (9 April, 1901).
- See also BERGH, R. S. (33).



MOULIN, H. See BAUMBERGER (23).

236. MUEHLBERG, M. Vorläufige Mitteilung ueber die Stratigraphie des Braunen Jura im nordschweizerischen Juragebirge. *Ecol. geol. Helvet.* vi, pp. 293-331, one folding table. (June.)  
[III, B, iii, c.]
237. MUNIER-CHALMAS, P. Note préliminaire sur les assises montiennes du Bassin de Paris. *Bull. Soc. geol. France* (3), xv, pp. 82-90, 3 text-figg. Remarks by G. DOLLFUS, pp. 90, 91. (March, 1897.)  
[III, B, ii, f.]
- See also GROSSOUVRE (145).
238. MURRAY, J. On the deposits of the Black Sea. *Scottish Geogr. Mag.* xvi, pp. 673-702. (Dec.)  
[III, A, ii.]  
Abstract in *J. R. Micr. Soc.* 1901, p. 142 (April, 1901).
239. NAGEL, W. A. Fortgesetzte Beobachtungen ueber polare galvanische Reizung bei Wasserthieren. *Arch. ges. Physiol.* liii, pp. 332-347. (24 Nov. 1892.)  
[II, C, vii.]
- See CARLIGREN (56), GEMMILL (125).
- NANSEN, F. See POMPECKJ (268).
240. NELLI, B. Fossili Miocenici dell' Appennino aquilano. *Boll. Soc. geol. Ital.* xix, pp. 381-418, pl. iv. (8 Sept.)  
[III, B, ii, d.]
241. NEWBIGIN, MARION I. Colour in nature: a study in biology. 8vo, xii+344 pp. London: Murray (1898).  
[II, B, ii, c.]  
*Echinoderma*, pp. 129-137.
242. NEWTON, R. B. & HOLLAND, R. Notes on microscopic sections of Limestones from Formosa: collected by Dr Kotô of Japan. *J. Geol. Soc. Japan*, vii, pp. 1-4. (20 June.)  
[II, B, ii, d.]
- NEWTON, E. T. See GUNN (147).
243. NOELLI, A. Contribuzione allo studio dei crinoidi terziari del Piemonte. *Atti Soc. Ital.* xxxix, pp. 19-49, i pl. (June.)  
[II, E, iii. III, B, ii, d. IV, F.]  
Abstract: by [P. E.] V[INASSA DE REGNY], *Riv. ital. Pal.* vi, pp. 113, 114 (30 Sept. 1900).
244. NOETLING, F. The Miocene of Burma. *Verh. Ak. Amsterdam*, Sect. 2, vii, No. 2, 131 pp., 1 map, 3 text-figg. (Aug.)  
[III, B, ii, d.]
245. NORDGAARD, O. Nogle oplysninger om Puddefjorden (temperatur, saltgehalt, plankton etc. 1896-97). *Bergens Mus. Aarbog*, 1897, No. xv, 19 pp., i pl. (March, 1898.)  
[III, A, ii.]
246. —. Some hydrographical results from an Expedition to the North of Norway during the winter of 1899. *Bergens Mus. Aarbog*, 1899, No. viii, 26 pp.  
[III, A, ii.]
247. +NORMAN, W. W. Do the reactions of the lower animals against injury indicate pain sensations? With additional note by J. LOEB. *Amer. J. Physiol.* iii, pp. 271-284. (1 Jan.)  
[II, C, vi.]  
Review: by G. V. N. DEARBORN. *Science* (n. s.), xi, pp. 270-272 (16 Feb. 1900).
248. NORTON, W. H. Geology of Scott County. *Rep. Geol. Surv. Iowa*, ix, pp. 389-519, 2 maps, i pl., 10 text-figg. (1899.)  
[III, B, iv, f, g.]
249. OGILVIE-GORDON, M. M. Ueber die obere Cassianer Zone an der Falzarego-Strasse (Südtirol). *Verh. geol. Reichsanst.* 1900, pp. 306-322. (Nov.)  
[III, B, iii, e.]
- See also GORDON, M. M. O. (132).

250. OPPENHEIM, P. Ueber mitteleocäne Faunen der Herzegowina und ihre Beziehungen zu den Schichten von Haskowo in Bulgarien und anderen alttertiären Faunen des östlichen Mittelmeerbeckens. *N. Jahrb. Min.* 1899, ii, pp. 105–115. (Aug. 1899.) [III, B, ii, f.]
251. —. Die Priabonaschichten und ihre Fauna, im Zusammenhange mit gleichalterigen und analogen Ablagerungen vergleichend betrachtet. *Palaeontogr.* xlvii (pp. 1–56, pls. i–vii, June; pp. 57–136, pls. viii–xii, Nov. 1900; pp. 137–348, pls. xiii–xxi, March, 1901). [III, B, ii, a, iv, c, f.]  
Review: by J. LAMBERT, *Rev. paleozool.* v, pp. 171, 172 (July, 1901).
252. ORCUTT, C. R. Catalog of fossils in the Orcutt collection. *W. Amer. Scient.* xi, p. 15. (Jan.) [III, B, iv, a.]
253. —. Sea-Urchins of the Pacific coast. *W. Amer. Scient.* xi, p. 73. (Aug.) [III, A, iv.]
254. ORTMANN, A. E. Grundzüge der marinen Tiergeographie. 8vo, iv+96 pp., 1 folding map. Jena: Fischer (1896). [III, A, i.]
255. —. Synopsis of the Collections of Invertebrate fossils made by the Princeton Expedition to Southern Patagonia. *Amer. J. Sci.* (4), x, pp. 368–381. (Nov.) [III, B, ii, d, iv, c.]
256. PÁLFI, M. von. Die geologischen Verhältnisse des westlichen Teiles des Gyaluer Hochgebirges. *Jahresber. Ung. geol. Anst.* 1897, pp. 55–66. (June?, 1899.) [III, B, ii, f.]
257. PAQUIER, V. Recherches géologiques dans le Diois et les Baronnies orientales. *Trav. Lab. geol. Grenoble*, v, pp. 149–556, v pls., 2 maps, 1 table. (1900 & 1901.) Also issued as Thèse pour doctorat, Paris, 1900; and in *Ann. Univ. Grenoble*; and *Bull. Soc. Isère*, xxxi, pp. 77–478. (1900.) [III, B, iii, i, l.]
258. +PARKER, T. J. & HASWELL, W. A. A Manual of Zoology. 8vo, xvi+550 pp. London: Macmillan. (1899.) [II, B, i, a, l: E, i, d.]  
Echinoderma, pp. 157–177.
259. PEACH, B. N. Palaeontological notes. *Mem. Geol. Surv. Scotland*, Explan. sheet 5, Kirkcudbrightshire, pp. 58–65. (1896.) [III, B, iv, a.]
260. —. Appendix. Part I. Palaeontological [to] The Geology of Central and Western Fife and Kinross. By Sir A. GEIKIE. *Mem. Geol. Surv. Scotland*, pp. 211–251. [III, B, iv, a.]  
PEARL, R. See CARLGREN (56).
261. PERNER, J. Nomenklatura a systematické postavení "Barrandových cystideí." [Nomenclature and systematic position of the "Cystidea" of Barrande.] *Vestník Ceske Ak. Praze*, ix, pp. 142–148. (Feb.) [III, B, iv, iv, c, g.]  
Abstract: by J. PERNER, *Geol. Centrbl.* i, p. 475 (1 Aug. 1901).
262. PERRIER, R. Cours élémentaire de zoologie. 8vo, 778 pp., 693 figg. Paris: Masson. (1899.) [II, B, i, a–f, l: E, i, d.]  
Echinodermes, pp. 244–276.
263. —. Diagnose des espèces nouvelles d'Holothuries draguées par le Travailleur et le Talisman. Deuxième note. *Bull. Mus. Paris*, 1899, pp. 299–303. (29 July, 1899; received in London, 28 Nov. 1900.) [IV, B, esp. *Gastrothuria*, *Thyone*, *Ocnus*, *Psolus*.]  
Abstract: by H. LUDWIG, *Zool. Centrbl.* viii, p. 275 (7 May, 1901).
264. —. Diagnose des espèces nouvelles d'Holothuries draguées par le Travailleur et le Talisman. Troisième note. *Bull. Mus. P.*



- 1900, pp. 116-119. (24 April; received in London 28 Nov. 1900.)  
[III, A, ii. iv, B, esp. *Hypsilothuria*, *Laetmogone*, *Benthogone*,  
*Elpidia*, *Oncirophanta*, *Peniagone*, *Ankyroderma*.]  
Abstract: by H. LUDWIG, Zool. Centrbl. viii, p. 275 (7 May, 1901).
265. PETRACZEK (or PETRASCHECK), W. Ueber das Alter des  
Ueberquaders im sächsischen Elbthalgebirge. Abh. Ges. Isis, 1897,  
pp. 24-40. (April, 1898.) [III, B, iii, b, I.]  
Abstract: by J. BOEHM, N. Jahrb. Min. 1900, ii, p. -438- (Dec. 1900).
266. —. Studien über Faciesbildungen im Gebiete der sächsischen  
Kreideformation. SB. Ges. Isis, 1899, pp. 31-84, 14 text-figg.  
(April.) [III, B, iii, b, I.]
267. PFEFFER, G. Echinodermen von Ternate, Echiniden, Asteriden,  
Ophiuriden und Comatuliden. In Ergebn. einer zool. Forschungsreise  
in den Molukken und Borneo... von W. KÜKENTHAL. Abh. Senck-  
enb. Ges. xxv, pp. 81-86. [III, A, iii. iv, E.]
- PIÉRI, J. B. (190) Zool. Rec. 1899. Abstract: Amer. Natural  
xxxv, p. 65 (Jan. 1901), and by W. E. C. tom. cit. pp. 233-235  
(March, 1901).
268. POMPECKJ, J. F. The Jurassic fauna of Cape Flora, Franz Josef  
Land. With a geological sketch of Cape Flora and its neighbour-  
hood by FRIDTJOF NANSSEN, being The Norwegian North Polar  
Expedition 1893-1896 Scientific results, vol. i, No. 2. 4to, 150 pp.,  
pls. i & ii and pl. facing p. 4. London: Longmans. (19 March.)  
[III, B, iii, c, 2, 3.]
269. POPOVICI-HATZEG, V. Note préliminaire sur les Calcaires  
tithoniques et néocomiens des districts de Muscel, Dimbovitza et  
Prahova (Roumanie). Bull. Soc. geol. France (3), xxv, pp. 549-  
553. (Aug. 1897.) [III, B, iii, b, 2; c, I.]
270. PROCHÁZKA, V. J. Miocénové ostrovy v krasu Moravském.  
[Miocene outliers in Moravia.] Rozp. Ceske Ak. Praze, viii, Mem.  
xli, 38 pp. (1899.) [III, B, ii, d.]
271. —. Das Ostböhmische Miocän. Arch. Landesf. Böhmen, x,  
No. ii, 174 pp., text-figg. [III, B, ii, d.]
272. PROSSER, C. S. Comparison of the Carboniferous and Permian  
Formations of Nebraska and Kansas. J. Geol. v, pp. 1-16 (Feb.),  
148-172, 3 text-figg. (March, 1897.) [III, B, iv, d.]
273. PROWAZEK, S. Zell- und Kernstudien. Zool. Anz. xxiii, pp. 305-  
309, text-figg. (28 May.) [II, F, viii.]  
Abstract: J. R. Micr. Soc. 1900, p. 447 (Aug. 1900).
274. —. Versuche mit Seeigelleiern. Zool. Anz. xxiii, pp. 358-360.  
(25 June.) [II, F, viii.]
- PYCRAFT, W. P. See BATHER (19).
275. QUINTON, R. Communication osmotique, chez l'Invertébré marin  
normal, entre le milieu intérieur de l'animal et le milieu extérieur.  
C.R. Ac. Sci. cxxxi, pp. 905-908. (6 Dec.) [II, c, iii.]  
Abstracts: J. R. Micr. Soc. 1901, p. 26 (Feb. 1901); by G. H[ARNS],  
Rev. Quest. Sci. (2), xix, p. 328 (Jan. 1901).
276. \*RADDIN, CHARLES S. The great sanitary waterway of Chicago.  
Overland Monthly (San Francisco, Oct. 1899.) [III, B, iv, g.]
277. RADKEVICH, GH. A. (RADKEWITSCH, G.). Novuiya lannuiya  
otnositel'no faunui myelovuiikh otlozhenii Podol'skoj ghubernii.  
Données nouvelles sur la faune des dépôts crétacés du gouverne-  
ment de Podoli. Zapiski Kiev. Obsheh. xv, livr. 2, pp. xxx-xxxix  
(1898, received Jan. 1900.) [III, B, iii, b, I.]

278. REIS, O. M. Erläuterungen zu der geologischen Karte der Vorderalpenzone zwischen Bergen und Teisendorf. I. Stratigraphischer Theil. Geognost. Jahresh. viii, pp. 1-155, 7 text-figg. (1896.)  
[III, B, ii, f; iii, b, 1.]
279. —. Die Fauna der Hachauer Schichten. Ia. Nachtrag. Geognost. Jahresh. x, pp. 81-94, pls. i, ii. (1898.) [III, B, iii, b, 1.]
280. REKSTAD, J. Om en forekomst af muslingskaller under moraene ved Bergen. Nyt Mag. Naturv. xxxvii, pp. 40-43, iii pls.  
[III, B, ii, b.]
- REMES, M. (186) Zool. Rec. 1899. Abstract in SB. Bohmisch. Ges. viii, pp. 167, 168 (March, 1899).
281. RIAZ, A. DE. Nouvelles observations sur le système crétacé dans les Alpes-Maritimes. Bull. Soc. geol. France (3), xxviii, pp. 764-771. (Sept.) [III, B, iii, b, 1, 2. IV, c.]  
Notes on the *Echinoidea* by J. LAMBERT.
282. RICHARD, J. Les Campagnes scientifiques de S.A.S. le Prince Albert I<sup>er</sup> de Monaco. 8vo, 140 pp., 60 text-figg. Exposition universelle de 1900. Principauté de Monaco.  
[II, D, viii, c: E, iii. III, A, ii.]
283. RITTER, W. E. & CROCKER, GULIELMA R. Papers from the Harriman Alaska expedition. III. Multiplication of rays and bilateral symmetry in the 20-rayed star-fish, *Pycnopodia helianthoides* (Stimpson). P. Ac. Washington, ii, pp. 247-274, pls. xiii, xiv, text-figg. 1-13. (10 Oct.)  
[II, B, i, d, 2; ii, d, 1: F, vi, d, 6; vii, d.]  
Note in Nature, lxiii, p. 13 (1 Nov. 1900). Abstract: by H. LUDWIG, Zool. Centrbl. viii, pp. 272, 273 (7 May, 1901).
284. ROLLIER, L. & TRIBOLET, M. DE. L'oxfordien pyriteux dans le canton de Neuchâtel. Eclog. geol. Helvet. vi, pp. 343-348. (June.)  
[III, B, iii, c, 2.]
285. ROMAN, F. Note sur le bassin miocène de Sommières (Gard.). Bull. Soc. geol. France (3), xxiv, pp. 771-779, 2 text-figg. (Feb. 1897.) [III, B, ii, d.]
286. ROTH v. TELEGD, L. Die Randzone des siebenbürgischen Erzgebirges in der Gegend von Várfalva, Torockó und Hidas. Jahresber. Ungarn geol. Anstalt, 1897, pp. 67-103. (1899.) [III, B, ii, d.]
287. ROULE, L. Revue annuelle de Zoologie. Rev. gen. Sci. xi, pp. 598-609. (30 April.)  
Discusses DELAGE (67), GRAVE (110), and GIARD (103), Zool. Rec. 1899, also CLARK (32) and GRAVE (86), Zool. Rec. 1898.
- ROWE, A. W. (202) Zool. Rec. 1899. Notices by H. B. W[OODWARD], Nature, lxiii, p. 234, 3 Jan. 1901; abstract by [A.] TORNQUIST, N. Jahrb. Min. 1901, pp. 515-517- (June, 1901).
288. —. The Zones of the White Chalk of the English coast. I. Kent and Sussex. With appendices by Prof. J. W. GREGORY [see 137] et alii. P. Geol. Ass. xvi, pp. 289-368, pls. viii-x. (19 March.)  
[III, B, iii, b, 1. IV, c, F.]
289. ROWLEY, R. R. New Species of Crinoids, Blastoids and Cystoids from Missouri. Amer. Geol. xxv, pp. 65-75, pl. ii. (Feb.)  
[III, B, iv, a, g. IV, F, G, H.]
290. —. Descriptions of new species of fossils from the Devonian and Subcarboniferous Rocks of Missouri. Amer. Geol. xxv. no. 2<sup>nd</sup> 273, pl. v. (May.) [IV, F (*Batocr.*, *Doryer*)]

291. [ROWLEY, R. R.] Notes on the Fauna of the Burlington Limestone at Louisiana, Mo. Amer. Geol. xxvi, pp. 245-251. (Oct.)  
[II, B, i, h, 5; ii, b, e: F, vii, h. III, B, iv, e. IV, F (*Eretmocr.*),  
H (*Codaster*, *Cryptoblastus*, *Granatocr.*, *Pentremites*).]
- RUSSO, A. (203, 204) Zool. Rec. 1899. Abstract in LUDWIG (211).
292. —. Sull' aggruppamento dei primi elementi sessuali nelle larve di *Antedon rosacea* Linck. e sul valore che ne deriva per i rapporti di affinità tra *Crinoidea*, *Holothurioidea* e *Cystoidea*. Rend. Acc. Lincei (5), ix, pp. 361-366. (June.) [II, B, i, f, 12; vi, f, 12.]  
Abstracts: in J. R. Micr. Soc. 1901, p. 43 (Feb. 1901); by H. LUDWIG, Zool. Centrbl. viii, p. 271 (7 May, 1901).
293. —. Sulla funzione renale dell' organo genitale delle Oloturie. (Sunto). Monit. Zool. ital. xi, Supplement i, pp. 38-41. (Dec.)  
A preliminary Abstract. [II, c, v.]  
Abstract: by H. LUDWIG, Zool. Centrbl. viii, p. 275 (7 May, 1901).
- SARASIN, —. See Koby (177), LORIOI (206).
294. SARDESON, F. W. On a little known larviform crinoid from the lower Paleozoic, and comparison with the living *Antedon*. (Abstract) Amer. Geol. xxi, p. 136. (Feb. 1898.) [II, B, i, f, 5.]
295. SCALIA, S. Revisione della fauna post-pliocenica dell' argilla di Nizzeti presso Acicastello (Catania). Atti Acc. Gioen. (4), xiii, Mem. xix, 26 pp. [III, B, ii, b.]
- SCHARDT, H. See Koby (177), LORIOI (206).
- SCHARFF, R. F. See BATHER (19).
296. SCHAUDINN, F. Vorläufiger Bericht ueber zoologische Untersuchungen im nördlichen Eismeer im Jahre 1898. Ver. Deutsch. zool. Ges. 1899, pp. 227-240. (1899.) [II, B, ii, a. III, A, v.]
- SCHOEBEL, E. See HAMMAR (149), WILSON, E. B.
- SCHLUETER, C. (296) Zool. Rec. 1897. Abstract by A. TORNQUIST, N. Jahrb. Min. 1901, ii, p. -161- (July 1901).—(209) Zool. Rec. 1899. Abstract by A. TORNQUIST, N. Jahrb. Min. 1901, ii, p. -162- (July 1901).
297. —. *Podocrates* im Senon von Braunschweig und Verbreitung und Benennung der Gattung. Zeitschr. Deutsch. geol. Ges. li, pp. 409-430. (Jan.) [III, B, iii, b, 1. IV, c.]
298. —. Ueber einige Versteinerungen des Unter-Devon. I. Ueber *Lodanella*. Zeitschr. Deutsch. geol. Ges. lii, pp. 178-180, text-fig. (July.) [IV, a.]  
Abstracts: by J. LAMBERT, Rev. paleozool. iv, p. 175 (Oct. 1900); by E. KAYSER, N. Jahrb. Min. 1901, ii, p. -133- (July 1901).
299. —. Ueber einige Kreide-Echiniden. Zeitschr. Deutsch. geol. Ges. lii, pp. 360-379, pls. xv-xviii. (Oct.) [III, B, iii, b, 1. IV, c.]  
Review: by J. LAMBERT, Rev. paleozool. v, p. 42 (Jan. 1901).  
Abstract: by G. MAAS, Geol. Centrbl. i, p. 508 (15 Aug. 1901).
300. SCHMEIL, O. Text-book of Zoology treated from a biological standpoint. By Dr O. SCHMEIL. Translated from the German by R. ROSENSTOCK. Edited by J. T. CUNNINGHAM. Pt. III. Invertebrates, 8vo, brds., pp. i-viii & 307-493, text-figg. London: Black. (Dec.) [II, E, i, d.]
301. SCHMIDT, M. Wissenschaftlicher Bericht ueber meine Aufnahmen im Sommer 1898. Jahrb. geol. Landesanst. Berlin, xix, pp. xcvi-ccii. (1899.) [III, B, iii, b, 1.]

302. SCHUCHERT, C. On the Lower Silurian (Trenton) fauna of Baffin Land. P. U. S. Mus. xxii, pp. 143-177, pls. xii-xiv. (April.)  
[III, B, iv, h. iv, f.]
303. —. Lower Devonian aspect of the Lower Helderberg and Oriskany formations. Bull. Geol. Soc. Amer. xi, pp. 241-332. (10 May.)  
[III, B, iv, f, g.]
304. SEGOVIA Y CORRALES, A. DE. Zoología general. Estudios elementales. Animales Invertebrados. Segunda Edición. 8vo, xxviii + 796 pp., xxviii pls. & 582 figg. Madrid: Suarez (1899).  
[II, B, i, a, 1: E, i, d; iv.]
- Equinodermos, pp. 153-170.
- SHARMAN, G. See GUNN (147).
305. SHEPPARD, T. Descriptive catalogue of the specimens in the Mortimer Museum of Archaeology and Geology at Driffield. 8vo, 82 pp., frontisp., text-figg. London: Brown.  
[II, E, i, c. III, B, iii, b, 1.]
306. SIMIONESCU, J. Fauna cretacică superioară de la Ūrmös (Transilvania). Acad. Romana, Publ. No. 4, 44 pp. (237-280), 3 pls. Bukarest. (1899.)  
[III, B, iii, b, 1. iv, c.]
- (215) Zool. Rec. 1899, was Prelim. Abstr. of this.  
Abstract: by J. BOEHM, N. Jahrb. Min. 1901, i, p. -469- (June 1901).
307. \*SĪNĪTZIN, D. F. Predvaritel'nŭi otchet o poyezdk na Byeloe more lyetom 1897 goda. Rapport préliminaire sur un voyage à la Mer Blanche en 1896. Trav. Lab. zool. Univ. Varsovie, 1896, pp. 223-233. (1897.)  
[III, A, v.]
308. \*—. Kratkii otchet o poyezdk na Byeloe more lyetom 1897 goda. Compte rendu d'un voyage à la Mer Blanche dans l'été de 1897. Trav. Lab. zool. Univ. Varsovie, 1897, pp. 227-229. (1898.)  
[III, A, v.]
309. SJÖGREN, H. Enkrinitfynd i fjällskiffrarne vid Sulitelma. Geol. Foren. Stockholm Forh. xxii, pp. 105-115, pl. iv. (Feb.)  
[III, B, iv, h.]
- SLADEN, W. P. See HOWES (164).
310. SMITH, G. O. The Geology of the Fox Islands, Maine. A contribution to the study of old volcanics. 8vo. 76+(4) pp. ii pls. Published by the Author, Skowhegan, Maine (1896).  
[III, B, iv, g.]
- Contains list of fossils by C. E. BEECHER, pp. 22, 23.
311. SOEHLE, U. Geologische Aufnahme des Labergebirges bei Oberammergau mit besonderer Berücksichtigung des Cenomans in den bayerischen Alpen. Geognost. Jahresh. ix, pp. 1-66, pls. i-viii, map & sections, 6 text-figg. (1897.)  
[III, B, iii, b, 1; a.]
- SOLLAS, W. J. (216) Zool. Rec. 1899. Abstract in LUDWIG (211).
312. —. Fossils in the Oxford University Museum.—II. On two New Genera and Species of Crinoidea (*Brahmacrinus ponderosus* and *Ciceroocrinus elegans*). Quart. J. Geol. Soc. lvi, pp. 264-270, pl. xvi, 4 text-figg. Discussion by F. A. BATHER, pp. 270-272. (30 May.)  
[II, B, i, f, 5; ii, a. III, B, iv, e, g. IV, f.]
- Preliminary Abstracts: Proc. Geol. Soc. pp. 39-41 (Jan. 1900); Geol. Mag. (n. s.) dec. iv, vol. vii, pp. 137, 138 (March, 1900); in Nature, lxi, p. 382 (15 Feb. 1900).  
Abstracts: Ann. Nat. Hist. (7) v, p. 544 (June, 1900); by C. V. CROOK, Geol. Centrbl. i, p. 28 (1 Jan. 1901), with correction, p. 315 (15 May 1901).



- SPANDEL, E. (201) Zool. Rec. 1898. Abstract by H. MONKE, Geol. Centrbl. i, pp. 185, 186 (15 Mar. 1901).
313. —. Eine fossile Holothurie. (*Synapta*-Reste aus den ober-oligocänen Cerithienschichten des Mainzer Beckens.) Abh. Ges. Nürnberg xiii, pp. 45–56, 5 text-figg. (Aug.) [III, B, i; ii, e. IV, B.] Abstracts: by H. LUDWIG, Zool. Centrbl. viii, p. 276 (17 May 1901); by M. COSSMANN, Rev. paleozool. v, p. 43 (Jan. 1901).
314. SPRINGER, F. On the presence of pores in the ventral sac in the Fistulate Crinoids. Amer. Geol. xxvi, pp. 133–151, pl. xvi. (Sept.) [II, B, i, f, 5.] See BATHER, F. A. (22). Abstract: by T. W. STANTON, Geol. Centrbl. i, p. 413 (1 July, 1901).
315. —. Further note on *Uintacrinus*. Amer. Geol. xxvi, p. 194. (Sept.) [II, B, i, f, 5.] STANTON, T. W. See BATHER (22), KLEM (173), SPRINGER (314).
316. STEFANO, G. DE. Appendice alla fauna fossile di Morrocu. Riv. ital. Pal. v, pp. 115, 116. (31 Dec. 1899.) [III, B, ii, b. IV, c.] STEINMANN, G. See MOERICKE (232).
317. STEUER, A. Vorläufiger Bericht ueber die pelagische Thierwelt des Rothen Meeres. SB. Ak. Wien, cvi, pp. 407–424, 1 map. (1897.) [III, A, iii.]
318. STEWART, C. Descriptive and illustrated catalogue of the physiological series of comparative anatomy contained in the Museum of the Royal College of Surgeons of England. Second edition. Vol. i, 1+160 pp., 8vo. London: Taylor & Francis. [II, B, i, a, 5; b, 10; c, 10; E, i, c.]
319. STILLE, H. Der Gebirgsbau des Teutoburger Waldes zwischen Altenbeken und Detmold. Jahrb. geol. Landesanst. Berlin, xx, Theil. ii, pp. 1–42, pls. i–iii. (1900? received in London, Aug. 1901.) [III, B, iii, c, 2; d.]
320. STOLLEY, E. Ueber Diluvialgeschiebe des Londonthons in Schleswig-Holstein und das Alter der Molerformation Jütlands, sowie das baltische Eocän überhaupt. Arch. Anthropol. Geol. Schleswig. iii, pp. 105–146. [III, B, ii, f.]
321. —. Zur Geologie der Insel Sylt. II. Cambrische und silurische Gerolle im Miocän. Arch. Anthropol. Geol. Schleswig. iv, pp. 3–49. [III, B, i; IV, h.]
- STORCH, —. See LOEB, J.
322. STRAHAN, A. On a phosphatic Chalk with *Holaster planus* at Lewes. Quart. J. Geol. Soc. lii, pp. 463–470. (Aug. 1896.) [III, B, iii, b, 1.]
323. — & GIBSON, W. The geology of the South Wales coal-field. Part II. The country around Abergavenny. Mem. geol. Surv. U. K. (Explan. sheet 232) viii+104 pp., ii pls., text-figg. [III, B, iv, e.]
324. STRUEBIN, K. Ein Aufschluss der Sowerbyi-Schichten im Basler Tafeljura. Eclog. geol. Helvet. vi, pp. 332–342, pls. iv, v. (June.) [II, D, x. III, B, iii, c, 3.]
325. STUERTZ, B. Ein weiterer Beitrag zur Kenntnis palaeozoischer Asteroiden. Verh. Ver. Rheinland, lvi, pp. 176–240, pls. ii–iv. (Dated 1899 on wrapper, but the Editor kindly informs me that this Heft was published on 18 June, 1900.) [II, B, i, e, 5. III, B, iv, a, f. IV, D, E.]

- Abstracts: by A. TORNQUIST, *N. Jahrb. Min.* 1901, ii, pp. 322-324 (Aug.); by L. BEUSHAUSEN, *Geol. Centrbl.* i, p. 445 (15 July 1901); by H. LUDWIG, *Zool. Centrbl.* viii, p. 359 (4 June, 1901).
326. TATE, R. Section of a well-bore at Mulgundawa near Wellington, South Australia. *Tr. R. Soc. S. Austral.* xxiv, pp. 109-111. (Dec.) [III, B, ii, f.]
327. THOMSON, J. A. Experimental study of fertilisation. *Nature*, li, pp. 551, 552. (5 April.) [II, F, viii.]
- TELEGD, L. ROTH v. See ROTH v. TELEGD (286).
328. TOBLER, A. Der Jura im Südosten der oberrheinischen Tiefebene. *Verh. Ges. Basel*, xi, pp. 284-369, ii pls. (April, 1896.) [II, D, x. III, B, iii, c, 3.]
329. —. Ueber Faciesunterschiede der unteren Kreide in den nördlichen Schweizeralpen. *N. Jahrb. Min.* 1899, ii, pp. 142-152. (Nov. 1899.) [II, D, x. III, B, iii, b, 2.]
- TODD, R. A. See ALLEN (7).
- TORNQUIST, A. (327) *Zool. Rec.* 1897. Abstract by A. TORNQUIST, *N. Jahrb. Min.* 1901, ii, pp. 158-161 (July, 1901).
330. —. Das vicentinische Triasgebirge. Eine geologische Monographie. 8vo, viii+196 pp., 1 table, xv pls., frontisp. ii col. maps, text-figg. 8vo, Stuttgart. (Dated 1901, but published December, 1900.) [III, B, iii, e.]
- See also ARNAUD, H., DESTINEZ, P. J., FORTIN, R., GREGORY, J. W., LORIOL, P. DE (and 207), MERRIAM, J. C., ROWE, A. W., SCHLUETER, C., STUERTZ (325).
331. TOULA, F. Ueber den marinen Tegel von Neudorf an der March (Dévény-Ujfalú) in Ungern. *Verh. Ver. Presburg (n.s.)* xi, pp. 3-30, text-figg. [III, B, ii, d.]
332. —. Lehrbuch der Geologie. Ein Leitfaden für Studierende. 8vo, x+412 pp., 367 text-figg., and Atlas of 30 plates, with 2 folding maps geol. col. Wien: Holder. [II, E, i, d.]
- TRIBOLET, M. DE. See ROLLIER, L. (284).
- UEXKUELL, J. v. (208, 209) *Zool. Rec.* 1898. Abstract by — SCHAEFER, *Zeitschr. Sinnesorgane* xvii, p. 283 (1898).—(234) *Zool. Rec.* 1899. Abstracts by H. LUDWIG, (211) and *Zool. Centrbl.* vii, pp. 434-436 (26 June, 1900).
333. —. Die Wirkung von Licht und Schatten auf die Seeigel. *Zeitschr. Biol.* xl, pp. 447-476, pl. i. (Dec.) [II, C, vi.]
334. UHLIG, V. Ueber eine Unterliassische Fauna aus der Bukowina. *Abh. Ver. Lotos*, ii, pp. 1-32, pl. i. [III, B, iii, d.]
- Abstract: by M. CANAVARI, *Riv. ital. Pal.* vi, pp. 18-22 (31 March, 1900).
- See also ANTHULA, D. J.
- ULRICH, E. O. See WINCHELL (357).
335. VALLENTIN, R. Notes on the fauna of Falmouth. From 1st January to 10th September, 1898, and from May, 1899, to the end of that year. *J. Inst. Cornwall*, xiv, pp. 198-208, i folding table. (Dec.) [II, F, v, a. III, A, ii.]
336. VAUGHAN, T. W. Reconnaissance in the Rio Grande coal fields of Texas. *Bull. U. S. Geol. Surv.* No. 164, 100 pp. xi pls.

- VERNON, H. M. (214) Zool. Rec. 1898. Abstract by G. HAHN, Rev. Quest. Sci. (2) xvii, pp. 671-673 (April, 1900).—(240) Zool. Rec. 1899. Notice by C. A. K[OFOID], Amer. Natural. xxxiv, pp. 823, 824 (Oct. 1900). Abstract in LUDWIG (211).—(241) Zool. Rec. 1899. Abstract in Rev. Sci. (4) xiii, pp. 373, 374 (24 March, 1900).
337. —. Cross Fertilisation among Echinoids. Arch. Entwicklmech. ix, pp. 464-478, 7 text-figg. (20 Feb.) [II, F, viii.]  
Notice by C. A. K[OFOID], Amer. Natural. xxxiv, p. 823 (Oct. 1900).
338. —. Certain laws of variation. I. The reaction of developing organisms to environment. P. R. Soc. London, lxvii, pp. 85-101. (26 Oct.) [II, F, viii.]  
Preliminary abstract: Nature, lxi, p. 577 (12 April, 1900).  
Abstracts: Science (n.s.) ix, pp. 793, 794 (18 May, 1900); J. R. Micr. Soc. 1901, p. 133 (April, 1901).
339. VERRI, A. & ANGELIS DOSSAT, G. DE. II<sup>o</sup> Contributo allo studio del Miocene nell' Umbria. Boll. Soc. geol. Ital. xix, pp. 240-279. (31 May.) [III, B, ii, d.]
- VERRILL, A. E. (243) Zool. Rec. 1899. Abstracts by H. LUDWIG (211) and Zool. Centrbl. vii, pp. 494, 495 (24 July, 1900).—(244) Zool. Rec. 1899. Abstracts by H. LUDWIG (211) and Zool. Centrbl. vii, p. 434 (26 June, 1900).
340. —. Notes on the Geology of the Bermudas. Amer. J. Sci. (4) ix, pp. 313-340. (May.) [II, D, x.]
341. —. North American *Ophiuroidea*. I. Revision of certain Families and Genera of West Indian Ophiurans. II. A Faunal Catalogue of the known species of West Indian Ophiurans. Tr. Connect. Ac. x, pp. 301-386, pls. xlii, xliii. (Dec. 1900, but the Author quotes it as 1899.) [II, B, i, e, 5; ii, b, e; D, ii; iii, e; v, c, d; vii: E, ii: F, vii, e. III, A, ii. IV, E.]  
Abstract: by H. LUDWIG, Zool. Centrbl. viii, p. 360 (4 June, 1901).
342. —. Additions to the Echinoderms of the Bermudas. Tr. Connect. Ac. x, pp. 583-587. (Dec.) [II, B, ii, c, d; I: D, iii, b, e; v, c; vii: E, i, a. III, A, ii. IV, E.]
343. VIGUIER, C. L'hermaphroditisme et la parthénogenèse chez les Echinodermes. C.R. Ac. Sci. cxxi, pp. 63-66. (July.) [II, F, iv, viii.]  
Abstracts: Rev. Sci. (4) xiv, p. 57 (14 July, 1900); J. R. Micr. Soc. 1900, p. 588 (Oct. 1900).
344. —. La théorie de la fertilisation chimique des œufs, de M. Loeb. C.R. Ac. Sci. cxxxi, pp. 118-121. (July.) [II, F, viii.]  
Abstract: by C. F., Rivista Biol. general. iii, p. 154 (Feb. 1901).
- VINASSA DE REGNY, P. E. See AIRAGHI (3, 4), ANTHULA, D. J., NOELLI (243).
- WAAGEN, W. See BATHER (21).
345. WAITE, F. C. "The madreporic body in *Asterias tenuispina* branches, forming 1-4 bodies in each animal, thereby making orientation difficult." [Abstr. Rep. of Meeting of N. Y. Acad. Sci.], Science, n.s., xii, p. 885. (7 Dec.) [II, B, ii, d, 2.]
346. WALTON, F. F. The Lincoln Lias and its fossils. Tr. geol. Soc. Hull, v, pp. 18-21. (Aug.) [III, B, iii, d.]

347. WELLER, S. Kinderhook faunal studies. I. The fauna of the Vermicular sandstone at Northview, Webster county, Missouri. Tr. Ac. St. Louis, ix, pp. 9-51, pls. ii-vi. (22 April, 1899.) [III, B, iv, e.]
348. —. The Paleontology of the Niagaran Limestone in the Chicago Area. The *Crinoidea*. Bull. Nat. Hist. Surv. Chicago, iv, Pt. I, 154 pp., xv pls. (27 June.) [II, B, i, f, 1, 9; ii, e: E, iii. III, B, iv, g. IV, F.]  
Review: by F. A. BATHER, Geol. Mag. (n.s.) dec. iv, vol. viii, pp. 376-379 (Aug. 1901).
349. —. A preliminary Report on the Stratigraphic Paleontology of Walpack Ridge, in Sussex County, New Jersey. Ann. Rep. Geol. Surv. New Jersey, 1899, pp. 1-46. (Oct.) [III, B, iv, f.]
350. WHITFIELD, R. P. Description of a new Crinoid from Indiana. Bull. Amer. Mus. xiii, pp. 23, 24, pl. iii. (6 April.) [III, B, iv, e. IV, F.]
351. — & HOVEY, E. O. Catalogue of the types and figured specimens in the Palaeontological Collection of the Geological Department, American Museum of Natural History. Part III, beginning with the Oriskany Sandstone. Bull. Amer. Mus. xi, part 3, pp. 189-356. (12 October.) [II, E, i, c. III, B, iv, f.]
352. WILLIAMS, H. S. The Paleozoic faunas of Maine: a preliminary report upon the Paleozoic faunas already known and upon new faunas recently collected from Aroostook County. Bull. U. S. Geol. Surv. No. 165, pp. 15-92, pls. i, ii. [III, B, iv, g.]
- WILSON, E. B. (173) Zool. Rec. 1895. Abstract for technique by E. SCHOBEL, Zeitschr. wiss. Mikr. xvii, p. 54 (1 May, 1900).— (257) Zool. Rec. 1899. Abstract for technique by E. SCHOBEL, t. c. p. 465 (18 April, 1901); Abstracts: J. R. Micr. Soc. 1900, pp. 469, 470 (Aug. 1900); by O. BÜTSCHLI, Zool. Centrbl. vii, pp. 681-684 (9 Oct. 1900).
353. —. The cell in development and inheritance. 2nd Edit. 8vo, xxii + 484 pp., 194 text-figg. New York & London: Macmillan. [II, F, iv; viii.]  
For first edit. see (350) Zool. Rec. 1897.
354. WILSON, H. V. Notes on the Natural History of the Wilmington Region. J. E. Mitchell Soc. xiv, pp. 1-4. (Reprinted from Science, (n. s.), vi, pp. 163, 164, 30 July, 1897.) (1897.) [III, A, ii.]
355. —. Marine biology at Beaufort. Amer. Natural. xxxiv, pp. 339-360, 5 text-figg. (May.) [II, F, iv. III, A, ii.]
356. WIMAN, C. Kambrisch-silurische Faciesbildungen in Jemtland. Bull. Geol. Inst. Upsala, iii, pp. 269-304, iii pls. (1897.) [III, B, iv, h.]
357. WINCHELL, N. H. & ULRICH, E. O. The lower Silurian Deposits of the Upper Mississippi Province. A correlation of the Strata with those in the Cincinnati, Tennessee, New York and Canadian Provinces, and the Stratigraphic and Geographic Distribution of the fossils. Final Rep. Surv. Minnesota, vol. iii, part ii, Palaeontology, Introduction, pp. lxxxiii-cxxix, 3 text-figg. (1897.) [III, B, iv, h.]
358. WINKLER, H. Ueber die Furchung unbefruchteter Eier unter der Einwirkung von Extractivstoffen aus dem Sperma. Nachr. Ges. Göttingen, 1900, pp. 187-193. (25 Aug.) [II, F, viii.]  
Abstracts: J. R. Micr. Soc. 1901, p. 133 (April, 1901); by W. E. C., Amer. Natural. xxxv, pp. 233-235 (March, 1901); by R. S. BERGH, Zool. Centrbl. vii, pp. 551-552 (14 Aug. 1900)



359. WIŚNIEWSKI, T. Szkic geologiczny Krakowa i jego okolic. [Geological sketch of Cracow and neighbourhood.] *Kosmos polski*, xxv, pp. 199-262, 1 map. [III, B, iii, b, 1; c.]
360. WOLFF, W. Versteinerungen des Tertiärs. In W. BORNHARDT'S "Deutsch-Ostafrika", vii, pp. 572-577. 8vo, Berlin: D. Reimer. [III, B, ii, a, d.]  
Abstract: by K. KEILHACK, *Geol. Centrbl.* i, p. 89 (1 Feb. 1901).
- WOODWARD, H. B. See ROWE, A. W.
361. YOSHIWARA, S. List of Tertiary Fossils of Japan. *J. Geol. Soc. Japan*, v, Nos. 54-57, pp. i, ii & 1-21. (1898.) [III, B, ii, a.]  
English and Japanese.
362. —. List of Cainozoic fossils of Japan. Supplement I. (Compiled from various works written from April 1898 to June 1900.) *J. Geol. Soc. Japan*, vii, No. 81, pp. 5-24 of European pagination. (20 June.) [III, B, ii, a.]  
English and Japanese.
363. \*ZACHARIAS, O. Merkwürdige Lebensgewohnheiten bei Tieren. *Natur*, xlvii, pp. 591-593. (1898.) [II, D, viii, b.]
364. ŽELÍZKO, J. V. Beitrag zum Studium des Weissenberger Pläners bei Neu-Straschitz. *Verh. geol. Reichsanst.* 1897, pp. 173-176. (June, 1897.) [III, B, iii, b, 1.]
365. —. Beitrag zur Kenntniss des Mittelcambrium von Jinec in Böhmen. *Verh. geol. Reichsanst.* 1897, pp. 320-324. (June, 1897.) [III, B, iv, k.]  
Abstract: *SB. Böhmisch. Ges.* viii, pp. 161-163 (1899).
366. —. Ueber einen neuen Fossilienfundort im mittelböhmischen Untersilur. *Verh. geol. Reichsanst.* 1900, pp. 85-93. (March.) [III, B, iv, h.]
367. —. O křídlovím útvaru okolí Pardubic a Přelouče. *SB. Böhmisch. Ges.* 1900, No. 18, 18 pp. [III, B, iii, b, 1.]
368. ZITTEL, K. A. VON. Ueber Wengener, St. Cassianer- und Raibler-Schichten auf der Seiser Alp in Tirol. *SB. Ak. München*, 1899, pp. 341-359. (April.) [III, B, iii, e.]
369. — & EASTMAN, C. R. (357) *Zool. Rec.* 1897, vol. I now complete. London & New York: Macmillan. [II, E, i, d.]  
Review by F. A. BATHER, *Science* (n. s.), xi, pp. 980-984 (22 June, 1900.) [IV, F, g.]
- ZOJA, R. See BERGH, R. S. (33).
370. ZWIESELE, H. Der Amaltheenthon bei Reutlingen. *Inaug. Diss.* 8vo, 39 pp., 1 pl., 2 text-figg. Bern. (1898.) [III, B, iii, d.]

## II. BIOLOGY.

### (A.) EVOLUTION.

- i. **General Principles:**—Influence of sessile habitat:—partially sessile *Crin.*, *Ast.*, & *Hol.* (p. 7), influence on locomotor organs *Crin.* & *Hol.* (p. 29), absence of eyes in *Crin.* not an effect (p. 34), complexity of nervous system in *Crin.* (p. 41), food-collecting organs in *Crin.* (p. 48), *Hol.* (p. 49), *Oph.* (p. 51), invagination of oral tentacles in *Hol.* (p. 76), position of mouth and anus, *Crin.* (p. 82) and *Hol.* (p. 83), passage from sessile to free-moving, *Antedon* (p. 153); LANG (190): on development of *Antedon* (p. 801), and *Ast.* (pp. 875-878); HOUSSAY (163): Pentamerism of *Echinoderma* a direct consequence; CUNNINGHAM (76), p. 5.

- ii. **Relations of Echinoderma:**—to other *Coelomata*, esp. lower *Chordata*; BATHER (19) pp. 5, 8.
- iii. **Phylogenies of smaller groups:**—General interrelations of Classes of *Echinoderma*; BATHER (19) pp. 3–35, esp. 33, 35, also 39, 78, 95, 211, 217, and GREGORY, pp. 238, 325.—*Ast.* and *Oph.* derived from primitive *Ech.* which in turn was derived from *Hol.*, *Pelmatozoa* also derived from *Hol.*, the original source of all was a *Dipleurula*; CUENOT (74) p. 457.—Evolution of *Pelmatozoa* in general (p. 39), of *Cystidea* in general (pp. 39–43), of Cystidean Orders, Families, and genera (pp. 43–77), of *Blastoidea* in general (pp. 78–81), of their Grades, Series, Families and Genera (pp. 79–91), of *Crinoidea* in general (pp. 95–97, 141–143), of their Orders, Families, and Genera (pp. 144–201), of *Edrioasteroidea* and of their Families and Genera (pp. 205–211), of *Holothurioidea* by GOODRICH (p. 235), of *Brisingiadae* (p. 259), of *Echinoidea* in general (pp. 325–328), of their Orders and Families (pp. 300–324), the last three items by GREGORY; BATHER (19).

Phylogeny of early Mesozoic *Ech.* with tree, and geol. distrib. and resultant classification (pp. 48 et sqq.); origin of *Cidaridae*, views of A. Tornquist and R. T. Jackson compared, *Cidaroida* possibly derived from *Bothriocidaris* through *Eocidaris* and *Pernocidaris*; ancestor of *Atelostomata* related to *Galeropygus* “jamais cet être bizarre avec ambulacres à assules uniporifères”; “mais, si l'on veut arriver à des connaissances précises sur l'évolution des Echinides, il faut observer la nature, étudier dans tous leurs détails les espèces fossiles et absolument renoncer aux transcendantes inductions qui ne peuvent conduire à rien” (p. 42); LAMBERT (187).—Slight change in reef-habiting echinoids of Jurassic as compared with those of the more exposed marly limestone deposits; LAMBERT (186), p. 474.

Phylogenetic position of *Cicerocr.* (syn. *Lagarocr.*):—a Pisocrinid (i.e. Triacrinid) that has developed arms something like *Ectenocr.*; SOLLAS (312): “the climax of the *Heterocrinidae*”; BATHER in discussion of SOLLAS (312): an advanced type of *Triacrinidae* that has reverted to *Heterocrinidae* in arm-structure; JAEKEL (168).

## (B.) MORPHOLOGY.

### i. Anatomy:—

#### a. ECHINODERMA.

1. General accounts:—Of living classes; PARKER & HASWELL (258) pp. 157–177; PERRIER (262) p. 244; SEGOVIA Y CORRALES (304).—General morphography, with special reference to features of phylogenetic and classificatory value; BATHER (19) pp. 3–35.—Fundamental morphology; HOUSSAY (163) pp. 53–58, figg. 20, 21.—Fundamental type; FLEISCHMANN (110), p. 72, fig. 26; HOUSSAY (163) p. 37, fig. 9.
2. Symmetries:—Origin of pentamerism (p. 11), the orientation of planes of bilateral symmetry (pp. 19–22); BATHER (19).—Radial symmetry, its relations to bilateral ancestor, and to larva; BUSQUET (53) p. 128.—Orientation and symmetry of external form; CUENOT (74) p. 438.—Suppressions of radiate symmetry, e.g. “the imperfect antimeres of [some] *Holothurians*, are spoken of as cases of ‘dysmerogenesis’”; LANKESTER (191) p. 8.
3. Homologies of Classes:—As regards organs generally (Chapter VIII *passim*); as regards apical plates or ‘calycinal system’ (p. 14, and by GREGORY, pp. 246, 268, 294, 325); BATHER

- (19): CUENOT (74) p. 438.—Supposed homologies of calycinal system independently due to radiate structure of the Echinoderm; HAMANN (148) p. 802.
4. Skeletal tissue or Stereom:—BATHER (19) pp. 28, 29.
  5. Skeletal Anatomy:—BATHER (19) p. 14.—Endoskeleton illustrated by preparations of *Antedon rosacea*, *Solaster papposus*, *Ophiocoma erinaceus*, *Echinometra lucunter*, *Clypeaster humilis*, *C. rotundus*, *Holothuria nigra*; STEWART (318) pp. 12-14.
  6. Hydrocoel and associated cavities:—BATHER (19) pp. 7-11.
  7. Coelom and other Body-cavities, and their Contents:—BATHER (19) pp. 22, 25.—Coelom, its relations to the archenteron; LANKESTER (191) p. 16.—Lacunar system and sinus; CUENOT (74) p. 450.—Haemal system of *Echinoderma* "one and the same morphological entity" with blood-vascular system of other Coelomocoela [= Coelomata], i.e. not derived from the coelom; LANKESTER (191) p. 11.
  8. Digestive System, Cuvierian organs:—Vacant.
  9. Nervous Systems and sense-organs:—BATHER (19) pp. 30-32.—Of the classes compared; CUENOT (74) p. 440.—Sense-organs of *Hol.*, *Crin.*, *Oph.*, *Ech.*, esp. spheridia, with figures after Hamann and Loven, general account; DALMADY (78) pp. 52-54.
  10. Mesodermal tissues (exc. skeletal): BATHER (19) p. 27.
  11. Axial organ or Ovoid gland:—BATHER (19) p. 23; CUENOT (74) p. 450.
  12. Genital system:—BATHER (19) p. 24.—Development and homologies of, in the classes; CUENOT (74) p. 453.

b. *HOLOTHURIOIDEA.*

1. General Anatomy:—General morphology and relations (pp. 17-19), also description of a typical example and of variations therefrom, by GOODRICH (pp. 220-226); BATHER (19).—Morphology; HOUSSAY (163) pp. 138-141, figg. 92-94.—General account, with figures of *Psolus*, *Hypsilothuria*, *Rhopalodina*, &c.; PERRIER (262) p. 271.
2. Symmetries:—(p. 20) and by GOODRICH (p. 236); BATHER (19).
3. Homologies:—with *Pelmatozoa* (pp. 18, 19), as regards gonads (p. 24), also, as regards oesophageal skeleton, by GOODRICH (p. 224); BATHER (19).
4. Stereom:—Spicules (p. 29), and by GOODRICH (pp. 220, 223); BATHER (19).
5. Skeletal Anatomy:—Calcareous ring; GOODRICH in BATHER (19) pp. 220, 224; STEWART (318).
6. Hydrocoel &c.:—Waternvascular system (p. 18), and by GOODRICH (pp. 221, 224); BATHER (19).
7. Coelom and other Body-cavities:—GOODRICH in BATHER (19) pp. 221, 223.
8. Digestive System:—Alimentary canal, Cuvierian organs, and respiratory trees; BATHER (19) pp. 18, 27, and by GOODRICH, p. 221.
9. Nervous System:—by GOODRICH (p. 221); otocysts (p. 32); BATHER (19).
10. Mesodermal tissues (exc. skeletal):—GOODRICH in BATHER (19) pp. 220, 223, 224.—Muscles of *Holothuria tubulosa*, dissection, and description thereof; STEWART (318) p. 90.

11. Axial organ:—its homologue; BATHER (19) p. 24.
12. Genital System:—(p. 24), & by GOODRICH, pp. 223, 225; BATHER (19).

c. *ECHINOIDEA*.

1. General Accounts:—General morphology and relations (pp. 15–17); also description of *Echinus esculentus* as typical *Ech.* and of variations therefrom by GREGORY (pp. 285–299); BATHER (19).—External and internal anatomy of *E. esculentus* as typical *Ech.*; CHADWICK (59): ditto, with good figures; CUÉNOT (75).—Morphology of *Ech.* with diagrams of integument, aboral pole, displacement of symmetry, jaw-apparatus, digestive tube, blood and water-vascular systems; HOUSSAY (163) pp. 121–130.—General account, with diagrams, general anat. and jaws; PERRIER (262) p. 262.
2. Symmetries:—BATHER (19) p. 21; HOUSSAY (163) pp. 123, 124.—Orientation and terminology of rays &c. in *Echinus*; CUÉNOT (75) p. 269.—Asymmetry of *Scutella excentrica* related to its habit of burrowing and its vertical position in sand; HARRINGTON (152).
3. Homologies with other Classes:—Generally (p. 33), as regards apical system (p. 14) and by GREGORY (pp. 294, 325); BATHER (19).
4. Stereom:—BATHER (19) (see II, B, i, a, 4).—Histology of spines, with special reference to fossils, classed according to the type of structure in *Cidaris*, *Echinus*, *Diadema*, *Clypeaster*, *Scutellidae*, *Spatangus*, descriptions of numerous spp.; HESSE (159).
5. Skeletal Anatomy:—Full general account; GREGORY in BATHER (19) pp. 285–289 & 293–298.—General description of skeleton of *Echinus esculentus*; CUÉNOT (75) p. 266, figg. 108–110, 112–115; CHADWICK (59) pp. 1–10, pls. i, ii.  
 Apical System:—of *Conoclypeus delanoui*; FOURTAU (117) p. 53, fig. 1.—‘Dicyclic apex’ new term, when genitals and oculars form double ring around periproct; ‘monocyclic,’ when they form a single ring [not to be confused with the same terms as long since applied to the apical system of Echinoderms in a totally different sense] (p. 12, footnote); also ‘hemiolicycle,’ when some oculars are between the genitals, so as to form a ring and a half, derived from *ἡμιόλος* [*sic*], and *κύκλος* [should be ‘hemioliocyclic’ from *ἡμιόλιος*] (p. 22, footnote); rudimentary suranal in young of *Palaeopedina globulus*, hitherto unknown among *Pedininae*, also tendency towards exocyclic anus (p. 25, & figg.): LAMBERT (187).  
 Coalescence of primary ambulacra, its cause and progress, studied in *Diademopsis*; LAMBERT (187) p. 8, text-figg.  
 Evolution of glyphostomate peristome; LAMBERT (187) p. 37.  
 Inconstancy of crenulations of spine-tubercles, value for classification; LAMBERT (187) p. 50.
6. Hydrocoel and associated cavities:—in general; GREGORY in BATHER (19) pp. 290, 291.—Of *Echinus*; CHADWICK (59) pp. 13–16, pls. iii, iv; CUÉNOT (75) p. 285, figg. 117, 122, 123.
7. Coelom and other Body-cavities, and their Contents:—GREGORY in BATHER (19) p. 292.—*Echinus esculentus*,—coelomic cavities (p. 284, figg. 116, 118, 127), lacunar system, Polian vesicles ‘vesicules spongieuses’ (p. 290, fig. 126); CUÉNOT (75): epineural canals (p. 18), pseudhaemal system and radial

pseudohaemal canals (p. 19), haemal system, existence of radial haemal canals denied (pp. 19, 20), coelom generally (p. 20), corpuscles in fluid (p. 21); CHADWICK (59), pls. iii, iv.—Radial vessels separated from test by a mesentery in *Asthenosoma heteractis*; BEDFORD (25) p. 279.—Corpuscles of coelomic liquid of *Echinus*; CUÉNOT (75), p. 282, fig. 121.

8. Digestive System:—*Echinus esculentus*; CHADWICK (59) pp. 9-13, pls. iii-v: CUÉNOT (75) p. 278, fig. 119.—Balloon-shaped anal tube of *Diadema setosum* and *Echinothrix calamaris*; ANDERSON (11) p. 13.—2 additional loops of gut round top of jaw-apparatus in *Asthenosoma heteractis*; BEDFORD (25) p. 279.
9. Nervous System:—Of *Echinus*; CHADWICK (59) p. 17, pls. iii, iv: CUÉNOT (75) p. 275, figg. 116-118.—Deeper ganglionated nerve-layer in radius of *Asthenosoma heteractis*; BEDFORD (25) p. 280 and text-fig.—Sphaeridia of *Echinus*; CHADWICK (59) p. 9, pl. ii.
10. Mesodermal Tissues (exc. skeletal):—Muscles,—lantern of *Echinus esculentus*, section of *Asthenosoma hystrix*: description of the preparations (pp. 89, 90): Joints,—that allow of continuous growth, illustrated by test of *Echinus acutus* (p. 53): that allow of voluntary motion, illustrated by spine-attachment of *Heterocentrotus mammillatus* and *Phyllacanthus imperialis* (p. 56); STEWART (318).
11. Axial Organ:—Of *Echinus*; CHADWICK (59) p. 20, pls. iii, iv: histology; CUÉNOT (75) p. 288, figg. 124, 125.
12. Generative System:—Of *Echinus*; CHADWICK (59) p. 21: CUÉNOT (75) p. 294, figg. 127, 128.

#### d. ASTEROIDEA.

1. General Accounts:—with diagrams of general anatomy & ambulacral system; PERRIER (262) p. 252.—General morphology and relations (p. 13), and description of a typical example and of variations therefrom, by GREGORY (pp. 241-248); BATHER (19).—Morphology, with diagrams of general anatomy, and ambulacral grooves; HOUSSAY (163) pp. 130-132.
2. Symmetries:—BATHER (19) pp. 19-22.—Experiments on regeneration of *Asterias* held to prove that "position of the madreporite is a variable one and does not depend on some polarity in the disc"; KING (171) p. 732.—Symmetrical addition of rays in *Pycnopodia*, the plane of symmetry compared with that of the larva; RITTER & CROCKER (283).—(See also II, F, vii, d, 2.)
3. Homology:—With *Oph.*; GREGORY in BATHER (19) pp. 238, 259.
4. Vacant.
5. Skeleton:—General account; GREGORY in BATHER (19) pp. 241, 246, 249.
6. Hydrocoel and associated cavities:—GREGORY in BATHER (19) pp. 243, 247 [describes 5 Polian vesicles in *Asterias rubens*, though they are said to be absent from the genus].
- 7-12. Vacant.

#### e. OPHIUROIDEA.

1. General Accounts:—PERRIER (262) p. 260.—Description of a typical example and of variations therefrom; GREGORY in BATHER (19) pp. 262-273.—*Ophiothrix fragilis* descr. as typical *Oph.*; APOSTOLIDÉS (17).—Morphology; HOUSSAY (163) p. 132.

2. Vacant.
3. Homology :—With *Ast.*; GREGORY in BATHER (19) pp. 238, 262: ditto, as regards arm-skeleton; HAMANN (148) p. 794.
4. Vacant.
5. Skeletal system :—Full account; HAMANN (148) pp. 786–803.—General account; GREGORY in BATHER (19) pp. 262–264, 268–272.—Of *Ophiothrix fragilis*; APOSTOLIDÉS (17) p. 303.—Terminology of elements of test; VERRILL (341) p. 302.  
 Alleged apical or calycinal system in *Oph.* shown to be a relatively recent development and not in ancient *Oph.* (*Ophiocrinasteriae*), fossil or recent *Ophiomyxidae* (*Streptophiuræ*), or *Euryalidae* (*Cladophiuræ*); STUERTZ (325) p. 181 et sqq.  
 Oral armature, peristomial plates said to be “between the mouth-frames and the buccal shields”; GREGORY in BATHER (19) p. 264; but MINCHIN in Review points out that it is the mouth-frames that are between the peristomial plates and the buccal shields.  
 Articular surfaces of arm-vertebrae considered as basis of classification, criticism of Bell and Gregory, impossibility of applying it to many fossil *Oph.*, detailed discussion of *Prostaster*, *Bundenbachia*, and *Palastropecten*; STUERTZ (325) p. 177 et sqq.  
 Position of Madreporite in palaeozoic *Oph.*; STUERTZ (325) p. 192.
6. Hydrocoel &c. Respiratory organs :—GREGORY in BATHER (19) pp. 265, 272.—Water-vascular system, full account; HAMANN (148) pp. 819–826: of *Ophiothrix fragilis*, anat. and histol.; APOSTOLIDÉS (17) p. 308, figg. 132–139.—Respiratory organs, bursae; HAMANN (148) p. 828.
7. Coelom and other Body-cavities :—GREGORY in BATHER (19) p. 266.—Blood lacunar system, full account (pp. 836–844), pseudhaemal spaces, epineural canals, axial sinus and its branches (p. 844), coelom of disc and arms (p. 847), their contents (p. 848); HAMANN (148).—Vascular system of *Ophiothrix fragilis*; APOSTOLIDÉS (17) p. 315, fig. 137.
8. Digestive System :—Of *Ophiothrix fragilis*, anatomy and histology; APOSTOLIDÉS (17) p. 305 et sqq., fig. 131.—Gut, peristomal spaces, and mesenteries; HAMANN (148) p. 826.
9. Nervous System :—Full account (pp. 806–819), innervation of spines (p. 786) and hooks (p. 789), epidermis (p. 783); HAMANN (148).—Of *Ophiothrix fragilis*; APOSTOLIDÉS (17) p. 318, fig. 140.
10. Mesodermal tissues :—Integument (p. 785), muscles of body-wall (pp. 803–806); HAMANN (148).—Muscular tissue of *Ophiothrix fragilis*; APOSTOLIDÉS (17) p. 305.
11. Axial Organ or Ovoid Gland :—HAMANN (148) pp. 841–844.—Of *Ophiothrix fragilis*; APOSTOLIDÉS (17) p. 316, figg. 138, 139.
12. Generative Organs :—Full anatomical and histological account of; HAMANN (148) pp. 830–836.—Of *Ophiothrix fragilis*; APOSTOLIDÉS (17) p. 320, figg. 141, 142.

## f. CRINOIDEA.

1. General :—General morphology and relations (pp. 9–12, 94–97), description of a normal crinoid of simple structure (pp. 97–110) and of the chief modifications of structure (pp. 110–137); BATHER (19).—Morphology with diagrams of general structure, arms, and chambered organ; HOUSSAY (163) pp. 132–138.—General account with generalised section of *Antedon*; PERRIN



- (262) p. 246.—Description of external and internal anatomy of *Antedon bifida* as typical *Crin.* with good figures; CUÉNOT (75).—General recapitulation of anat. of *Antedon*; BOSSHARD (44) pp. 65-71.—General account of structure, with special reference to Silurian forms; WELLER (348) pp. 23-37.
2. Symmetries:—General orientation (p. 110), symmetry of base (p. 123); BATHER (19).—Orientation and terminology of rays &c. in *Antedon*; CUÉNOT (75) p. 230.
  3. Homologies:—Relations of *Crin.* to *Cyst.* and *Blast.*; BATHER (19) pp. 95-97.—Radials=terminals; CUÉNOT (75) p. 232.
  4. Vacant.
  5. Skeleton:—Account of simple type (p. 99 et sqq.) and of its chief modifications (p. 111 et sqq.); BATHER (19).—General account, *Antedon*, and special of arms and cirri; BOSSHARD (44) pp. 73-84.—General, *Antedon*; CUÉNOT (75) p. 232, figg. 87-90.—Criticism of terminology used by WAAGEN & JAHN; BATHER (21) p. 104.  
 Dorsal cup, dicyclic and monocyclic base, compound radials, supplementary plates; BATHER (19) pp. 99, 111, 117 et sqq.  
 Tegmen, and homologies of orals; BATHER (19) pp. 100, 124 et sqq.—Tegmen of *Scyphocr.*; BATHER (21) p. 119.—Tegmen of *Uintacr. socialis* partly calcified, central anus, marginal mouth to which peripheral food-grooves lead from arm-rami, as in *Actinometra*; SPRINGER (315).  
 Anal plates; BATHER (19) p. 119.—Anal tube, pores between plates of: doubted; BATHER (19) p. 130: described and figd. for *Decadocr. tumidulus*, *Aulocr. agassizi*, *Scytalocr. validus*, *S. van hornei*, *Scaphiocr. unicus*, *S. arboreus*, *S. swallowi*, *Decadocr. grandis*, *Parisocr. subramosus*, and similarly placed slits in *Scaphiocr. missouriensis* and *Scytalocr. hoveyi*; SPRINGER (314): the statements accepted by BATHER (22), who, however, still criticises the attitude and figures of WACHSMUTH & SPRINGER's Monograph (336) Zool. Rec. 1897.  
 Brachia,—modifications, terminology of brachials; BATHER (19) pp. 100, 112 et sqq.—Arm-branching in *Heterocrinidae* and *Triacrinidae* (= *Pisocrinidae*) compared, with reference to *Lagarocr.* (= *Cicerocr.*); JAEKEL (168): the same contrasted; BATHER in discussion on SOLLAS (312).—Fixed brachials and pinnulars of *Scyphocr.*; BATHER (21) p. 117, fig. 7.  
 Stem,—its origin, structure, and modifications, the law of Wachsmuth & Springer revised; BATHER (19) pp. 105, 132 et sqq.—Stem of *Scyphocr.*; BATHER (21) p. 119.—Origin of centrodorsal of *Antedon* traced to 3, 5, and 6 infrabasals, respectively, in Paleozoic *Crin.*; SARDESON (294).—"*Calpiocr. bohemicus*" considered as a root; BATHER (21) p. 112, fig. 6.
  6. Hydrocoel &c.—Water-vascular system and its pores, generally; BATHER (19) pp. 102, 130: in *Antedon*; CUÉNOT (75) p. 250, figg. 99-102, 104, 105.
  7. Coelom and body-cavities; contents:—coelomic and haemal spaces, axial canal; BATHER (19) pp. 103, 133.—Coelom of theca and arms of *Antedon*; CUÉNOT (75) p. 244, figg. 95, 96, 103.—Lacunar or haemal system,—spongy organ (p. 254, figg. 95, 101, 102); CUÉNOT (75).—The radial blood-vessels and their circum-oesophageal ring referred to the pseudohaemal (=peri-haemal) system; BATHER (19) p. 102; but MINCHIN in Review claims that they belong to the lacunar or haemal system, since the pseudohaemal system of *Ast.* is coelomic in origin, and probably represented in *Crin.* by the subtentacular canals.

- Globules, amoebocytes, &c. of *Antedon*; CUÉNOT (75) p. 243, fig. 93.
8. Digestive System :—BATHER (19) pp. 102, 136.—Of *Antedon bifida*, two ramifying caeca; CUÉNOT (75) p. 241, fig. 94.
  9. Nervous System :—BATHER (19) pp. 103–106.—Of *Antedon* (p. 238, fig. 92), chambered organ (p. 247, fig. 97); CUÉNOT (75).—Axial ridges inside cup-plates of *Cyathocr. cora*; WELLER (348) p. 63.
- Sense-organs of *Antedon*, tactile papillae, histology; CUÉNOT (75) p. 240, fig. 93.
10. Mesodermal tissues, &c. :—Modes of union between skeletal elements; BATHER (19) pp. 108, 116, 117.—Exhaustive enquiry into muscles, ligaments, and connective tissue of arms and cirri of *Antedon*; BOSSHARD (44) pp. 84–102.—Muscles of *Antedon*, distinguished as 'hyaline' and 'refrigent'; CUÉNOT (75) p. 236, fig. 91.
- Sacculi; BATHER (19) p. 137: of *Antedon*; CUÉNOT (75) p. 237.
11. Axial Organ :—*Antedon*, histology, said to be "sans homologue chez les autres Echinodermes"; CUÉNOT (75) p. 249, fig. 98.
  12. Generative System :—CUÉNOT (75) p. 255, figg. 103–105.—*Crin.* like *Hol.* are Monorchonia, the rudiments of the gonads unconnected with the axial organ, and in postr. interradius, as in *Cyst.*; RUSSO (292).

#### g. CYSTIDEA.

1. General morphology, relations, and lines of evolution of *Cystidea* (pp. 39–44), of *Edrioasteroidea* (pp. 206–211); BATHER (19).
  - 2–3. Vacant.
  4. Stereom :—Structure of test in *Cystidea* (p. 41, fig. i) in *Aristocystis* and *Calix* (p. 44, figg. iii, v); BATHER (19).
  5. Skeleton :—Complete description of *Edrioaster buchianus*; BATHER (20).—'Hydrophores palmées' are epithecal food-grooves; BATHER (19) pp. 44, 46.
  6. Hydrocoel &c. Respiratory organs :—Reconstruction of ambulacral structures in *Edrioaster* (p. 197, text-fig. 4), madreporite and water-ring (p. 198, text-fig. 6, pl. x); BATHER (20).—Extensions of hydrocoel in *Diploporita*; BATHER (19) p. 71.
- Diplopores (pp. 41, 71), peculiar distribution of pectinirhombs in *Glyptocystidae* explained (p. 58, fig. xx); BATHER (19).
7. Dorsal mesentery in *Edrioaster*; BATHER (20) p. 199, text-fig. 6.
  8. Course of gut in *Edrioaster*; BATHER (20) p. 199: in *Glyptocystidae*; BATHER (19) p. 58.
  - 9–10. Vacant.
  11. Chambered organ, *Edrioaster*; BATHER (20) p. 202, pls. viii–x.

#### h. BLASTOIDEA.

1. General morphology and evolution of structures, including *Protoblastoidea*; BATHER (19) pp. 78–91.
- 2–4. Vacant.
5. Skeleton :—Description and elucidation of the main points of skeletal structure in all genera; BATHER (19) pp. 80 et seq.—Anal tube in *Schizoblastus sayi* (p. 247), probably in *Codonites* ? inopinatus and *Granatocr. aplatus*, anus and posterior spiracles not confluent in *G. aplatus*, extra anal plate in a *Pentremites elongatus* (p. 248); ROWLEY (291).



6. Respiratory organs:—Hydrospires, origin and gradual elaboration; BATHER (19) pp. 83 et sqq.  
7-12. Vacant.

ii. Variation:—

- a. In form:—Large size of Echinoderms in Arctic regions; SCHAUDINX (296) p. 236.—In measurements of *Schizaster philippii* (p. 15), *Echinus magellanicus* (p. 10) and other spp.; MEISSNER (229).—Variations of *Ananchytes sulcata* connected with locality [or horizon]; GRÖNWALL (143) p. 68.—Due to environment, *Anorthopygus michelini* is elevated and found in limestone, *A. orbicularis* is flattened and found in marl; CHOFFAT (61) also (62) p. 199.—Dwarf fauna including *Hemiaster* spp.; CHOFFAT (62) p. 44.
- b. In form and surface characters:—Study of variations in *Conoclypeus delanoui*, esp. form, periproct (fig. 2), measurements; FOURTAU (117) p. 51.—In ornament of apex of *Asterocidaris granulosa*, showing importance attached to this in *Tiarinae* to have been exaggerated; LAMBERT (186) p. 485.—In gonopores and sutures in *Laganum decagonale* (p. 284), in lunules, pore-fields, &c. of *Echinodiscus laevis* (p. 285), in superomarginals and in position of anus in *Archaster typicus* (p. 289); BEDFORD (25).—In *Asterias lincki* (pp. 201, 202), in spines of *A. groenlandica* (pls. v, ix), in *Solaster papposus*, partly as local races (p. 207, pl. vi), in *S. endeca* (p. 210), in *Ctenodiscus crispatus* (p. 223), in *Gorgonocephalus eucnemis* (p. 227); DOEDERLEIN (93).—In shape of oral shields and in dorsal plating of *Ophiozona nivea*; VERRILL (341) p. 302.—General account of variations observed in *Agaricocr.*; KLEM (173).—In *Cryptoblastus melo* (p. 246), *Schizoblastus sayi* (p. 247), *Orbitremites norwoodi* (p. 247); ROWLEY (291).
- c. In colour:—Colours and pigments of *Ast.*, *Oph.*, *Ech.*, *Crin.*, *Hol.*, their variations, contrast of deep and shallow water forms, comparison with *Crustacea*; NEWBIGIN (241) pp. 129-137.—Variation in colour of *Diadema saxatile* (p. 277), differences in colour between Singapore and Malacca specimens of *Temnopleurus torquaticus* (p. 280); BEDFORD (25).  
Colour in life,—of *Synapta vivipara* (p. 583), *Synapta viridis* (p. 587), *Ophiactis krebsi* (p. 586); VERRILL (342).—Of *Palaeopneustes* cf. *hystrix* (and in spirit) (p. 7), of *Diadema setosum* and *Echinothrix calamaria*, of *Echinoneus cyclostomus* (p. 16); ANDERSON (11).—Of various littoral *Ech.* from S. America; MEISSNER (229).—Of *Salmacis sulcata* (p. 282) and *S. globator* (p. 283), of *Laganum decagonale* (and in spirit) (p. 284), of *Craspidaster glauconotus* (ditto) (p. 291), of *Retaster cribrosus* (ditto) (p. 298), of *Stellaster incei* (black pigment on ventro-lateral plates only seen in formal specimens) (p. 295); BEDFORD (25).—Of *Lophaster furcifer* (p. 468), *Asterias panopla* (p. 486), and *A. lincki* (p. 487); LUDWIG (210).—Of *Oph.*; HAMANN (148) p. 782.—Of *Ophioscolex glacialis* (and spirit); GRIEG (139) p. 268.—Of *Antedon rosacea* [i.e. *bifida*], specimens of three very distinct schemes of colour all in same situation; MALARD (220) p. 28. For Pigments, see II, c, v.
- d. Meristic variation:—
  1. Variation from pentamerous symmetry:—Hyperactiny in starfish explicable as due to regeneration of 2 rays in place of 1, no evidence for congenital origin; KING (171) p. 729.—Origin of the sixth ray, and addition of accessory rays, in *Pycnopodia*; RITTER & CROCKER (283).—Variation in number of arms of *Crossaster papposus* (p. 463), of *Stichaster albulus* (p. 480); LUDWIG (210).—*Asterias* [*? vulgaris*] 4-rayed, apparently due to

fusion of two rays; DAVENPORT (80) p. 196, fig. 180.—Discussion of hyperactiny and heteractiny in *Oph.*, not noticed in the northern collections under examination; GRIEG (139) p. 272.—5 and 6-rayed *Ophiostigma isacanthum* and *Ophiocoma pumila*; VERRILL (342) p. 583.—Stem-fragment of *Balanocr. subteres* with six petals on joint surface, but four cirri at node; LISSAJOUS (195) p. 22.

2. Reduplication or absence of parts:—Variation of numbers of anal plates in *Arbacia dufresnei*; MEISSNER (229) p. 6.—Variations in topotypes of *Hemicidaris lucensis*, esp. in composition of major ambulacrals, due to accidental coalescence of plates, also seen in *H. grimaudensis*; LAMBERT (186) p. 477.—Multiple madreporites in *Asterias*; WAITE (345).—Forked arm in *Pteraster militaris*; LUDWIG (210) p. 470.—Variation in number of rami to the arm in *Agaricocr.*; KLEM (173) p. 172.
- e. Abnormalities:—*Phyllophorus pellucidus* and *P. drummondii* with 15 tentacles of which each third one is smaller; LUDWIG (209) pp. 154, 155.—Variations in mouth-parts of *Ophiacantha bidentata* perhaps due to repair of damages; VERRILL (341) p. 322.—Abnormal anal area of cup in *Cyathocr. vanhornei* (p. 64), in *Thysanocr. pentangularis* (p. 72), separation of RR by iBr in some specimens of *Siphonocr. nobilis*, as in *Rhodocrinidae* (p. 88); WELLER (348).—Slight reduction of left postr. basal, with shifting of suture, in *Pisocr.* (= *Triacr.*) *pilula*; SOLLAS (312) p. 268, text-fig. 4: JAEKEL (168) p. 483, fig. 5.—Extra anal in *Pentremites*; ROWLEY (291) p. 248.

### iii. Secondary Sexual Characters:—

- a. Differences of Form or Structure:—Vacant.
- b. Differences of Colour:—Vacant. (See under II, B, ii, c.)
- c. Protection of Young:—In *Hol.* brood-pouch due to direct stimulus of eggs; CUNNINGHAM (76) p. 309.—Viviparity and care of brood in *Cucumaria glacialis* alone among Arctic *Hol.*, contrast with Antarctic; LUDWIG (209) pp. 144, 172.—List of Arctic *Ast.* with care of brood; LUDWIG (210) p. 495.

## (C.) PHYSIOLOGY.

- i. **General:**—Vacant.
- ii. **Circulation:**—Introduction of fluid into the ambulacral system; CUÉNOT (74) p. 454.
- iii. **Respiration:**—Osmosis between internal fluid and external medium maintaining almost an equilibrium of density, in *Asterias rubens* and other marine invertebrates; QUINTON (275).—Respiration of *Ophiothrix fragilis* by burrow and stone-canal; APOSTOLIDÉS (17) p. 317.
- iv. **Alimentation and Digestion:**—Vacant. (See II, D, iv.)
- v. **Excretion and its Products:**—Renal function of various organs in Echinoderms, summary of previous knowledge, conclusions of BORDAS as to respiratory trees of *Hol.* confirmed, and the function now first ascribed to genital organs of *Hol.*; RUSSO (293).—Excretion and phagocytosis; CUÉNOT (74) p. 455.—Excretion in *Echinus*, by endothelium of second curve of intestine, by ovoid gland, peritoneal cells, and amoebocytes (p. 293), in *Antedon*, crystalline corpuscles in mesenteries are perhaps products of excretion (p. 243); CUÉNOT (75).  
Pigments (see also II, B, ii, c); NEWBIGIN (241).—Pentacrinin and Antedonin, account abstracted from Moseley, 1877; LIVERSIDGE (196)

- p. 265.—Chemical composition of violet pigment in *Echinus esculentus*; GRIFFITHS (141).—Iron in the hepatopancreas of Echinoderms; CUSHNY (77).—Copper normally occurring in *Echinus esculentus*, *Stichopus regalis*, and *Asterias rubens*; DUBOIS (99).
- vi. **Sensation**.—Reflex of Echinoid to light and shadow; UEXKUELL (333).—Asymmetry of some *Crin.* and *Blast.* suggested as due to heliotropism; KLEM (173) p. 179.—Pain not felt by *Asterias* or *Ophiura*, proved by experiment; NORMAN (247) p. 278.
- vii. **Miscellaneous and Experimental Physiology**.—Movements of *Antedon* arms and cirri, action of muscles and ligaments; BOSSHARD (44) pp. 103–105.—Coordination of locomotor movements after amputation of arms or cutting of nerve-ring in *Ophiura*; GRAVE (135) p. 87.
- No reaction to galvanic current by the most sensitive and moveable parts of adult *Asteracanthion*, *Echinaster*, *Ophioderma*, and *Antedon*; NAGEL (239) p. 337.—Effect of constant electrical current on larvae of *Strongylocentrotus*, *Sphaerechinus*, *Ophiothrix*, and *Asteracanthion*; CARLGREN (56) pp. 470–478.
- Effect on ciliary motion in *Ech.* larvae of solutions of NaCl, NaCl+KCl, and MgCl<sub>2</sub>+CaCl<sub>2</sub>; LOEB (197) p. 335 [see also under II, F, viii].

## (D.) BIONOMICS.

- i. **General Accounts**.—General account of *Echinoderma*; ACLOQUE (2).—General bionomics of *Echinoderma*, esp. *Asterias vulgaris*; DAVENPORT (80) pp. 192–204.
- ii. **Special habits**.—Boring of *Strongylocentrotus lividus* not always put into practice; BEAUMONT (24) p. 756.—For boring, see also ANDERSON & ANDREWS, sub iii.
- Phosphorescence in *Ophiacantha*; VERRILL (341) p. 321.
- iii. **Habitat**.—(a) *Of Hol., Ech., Ast., Oph., and Crin.* in Valencia Harbour; BEAUMONT (24) pp. 796, 797.—Ditto in Port Erin Bay; HERDMAN (157) pp. 49, 50, pls. ii, iii.—*Of Synapta, Ophiocnida, Ophiothrix, and Echinocardium* in Salcombe estuary; ALLEN & TODD (7) p. 187.—(b) *Holothuriodea*.—Arctic and Sub-Arctic (passim, sub species, and p. 171); LUDWIG (209).—*Synapta viridis* among filamentous green algae; VERRILL (342) p. 587.—(c) *Echinoidea*.—Influence of habitat on distribution of species, with special reference to spp. quoted sub III, A, iii; BEDFORD (25) p. 272.—*Of Echinus esculentus*; CUÉNOT (75) p. 266.—Vertical position in sand of *Scutella excentrica* related to its asymmetry; HARRINGTON (152).—Boring in coral conglomerate at low-water mark, *Echinostrephus*; ANDERSON (11) p. 14.—*Echinometra lucunter* bores in rock at Christmas Id.; ANDREWS (13) p. 117.—(d) *Asteroidea*.—various spp., see list in III, A, iii; BEDFORD (25).—*Of Arctic spp.*; LUDWIG (210) passim, esp. pp. 488, 495.—(e) *Ophiuroidea*.—Arctic, discussed under spp., also discussion of epizootic habitats (p. 272); GRIEG (139).—*Ophiura brevispinna* at North Falmouth, Mass.; GRAVE (135) p. 84.—*Ophiothrix fragilis*; APOSTOLIDÉS (17) p. 300.—*Ophiothrix angulata* often gregarious among sponges (p. 585), *Ophiactis krebsi*, in sponges and corals, gregarious while young (p. 586); VERRILL (342).—*Ophiothrichidae* (p. 305), *Amphiura* (p. 308), *Ophiacantha* (p. 321), *Ophiocnondrus* adapted for clinging to gorgonians (p. 357); VERRILL (341).—(f) *Crinoidea*.—*Antedon bifida*; CUÉNOT (75) p. 228.

- iv. **Feeding**:—Amount of food correlated with rate of growth in *Asterias*; MEAD (228).—Lamellibranchs and a holothurian, *Hoplodactyla*, eaten by *Luidia penangensis*; BEDFORD (25) p. 293.—*Ophiura brevispina* a nocturnal scavenger; GRAVE (135) p. 85.—Young in brood-chamber of *Pteraster obscurus* nourished by slime secreted from modified papulae; DOEDERLEIN (93) p. 215.
- v. **Defence and Protection**:—
- Active:—Irritation resulting from prick by spines of *Diadema* due to epidermal membrane; ANDERSON (11) p. 14.
  - Concealment:—Vacant.
  - Protective Coloration:—Green *Synapta viridis* in green algae; VERRILL (342) p. 587.—Olive-green of *Ophiura brevispina* in seaweed; GRAVE (135) p. 85.—*Hemieuryale pustulata*, *Sigambra murrhina*, and *Ophioplus tuberculatus* ornamented and coloured to imitate *Gorgonella* to which they cling (pp. 364, 365), colour of *Amphiura* protective, *A. otteri* salmon or light orange protective in deep water (p. 308); VERRILL (341).
  - Other protective Adaptations:—(?) variations in spines of spp. of *Ophiacantha*; VERRILL (341) p. 321.
- vi. **Locomotion**:—Action of spicules in locomotion of apodous *Hol.*, synopsis of opinions, SLUITER in discussion says that in many *Synaptidae* spicules lie too deep in skin to be effective, and their action would also be hindered by the secretion of slime; HORST (162).—Burrowing of *Scutella excentricus* related to its asymmetry; HARRINGTON (152).—Burrowing of *Ophiocnida brachiata*; ALLEN & TODD (7) p. 187.—*Ophiothrix fragilis*, "il n'emploie ses pattes ventouses que d'une manière passagère"; APOSTOLIDÉS (17) p. 301 [les Ophiurides n'ont pas des pattes ventouses].—*Ophiura brevispina* by arms, spines, and, the spines being short, also by the podia which form fixed points; GRAVE (135) p. 85.
- vii. **Autotomy and Regeneration**:—In *Asterias vulgaris*, in state of nature: 10·76% found regenerating arms; injured arm as a rule thrown off from disc and wholly replaced; experiments on regenerative power of single arms, of portions of disc, of madreporite, of tips of arms; KING (171).—In *Linckia* "regeneration takes place, without any part of the disc being preserved, from a bare arm-fragment" proved (?) by a series of specimens, not by experiment; HUBBRECHT (165) p. 328.—Autotomy, constant occurrence in *Asterias tenuispina* and *Echinaster fallax*, exhibition of a *Linckia* in which regeneration seemed to have taken place in an arm devoid of any part of disc, but this doubtful; HORST (161).—Loss of ray followed by regeneration in *Asterias* does not affect normal growth-curve; MEAD (228).—Two regenerating rays in young *Asterias*; DOEDERLEIN (93) pl. ix.—Incipient autotomy of ray in *Archaster typicus*; BEDFORD (25) p. 289. Regeneration in *Oph.*; DAVIDOV (81).—In *Ophiacantha* produces apparent variations; VERRILL (341) p. 322.—*Ophiactis krebsi*, 6 or 7 arms in young, multiplies by fission; VERRILL (342) p. 586.—In *Antedon*; CUÉNOT (75) p. 261.—Bulb of anal tube in type of *Batocr. insuetus* possibly due to regeneration; KLEM (173) p. 179.
- viii. **Parasites and Commensals**:—(a) The following Copepods parasitic on Echinoderms near Naples, *Asterocheres liljeborgi* on *Echinaster sanguinolentus*, *A. echinicola* on *Echinus esculentus*, *A. violaceus* on *E. microtuberculatus*, *Ophioglypha* (?), and *Ophiothrix* (?), also with *A. minutus* on *Strongylocentrotus lividus* and *Sphaerechinus granularis*, *Collocheres gracilicauda* on *Antedon mediterranea* [= *bifida*], *Scottomyzon gibberum* on *Asterias rubens*, *Parartotrogus richardi* on

- ? *Ophioglypha lacertosa*, *Cancerilla tubulata* on *Amphiura squamata*, ? *Ophiocoma nigra*, & ? *Ophiothrix fragilis*; also a Lichomolgid on *Sphaeræchinus granularis*; GIESBRECHT (129) p. 199.—(b) Copepods—*Dactylopus*, *Esola*, *Rhaphidophorus*, *Diogenidium*, and *Abacola*,—also *Leuckartella*, in body-cavity of *Mulleria agassizi*; EDWARDS (103).—Parasites of *Hol.*; ZACHARIAS (363).—Gastropod in gut of *Stichopus tremulus*; BONNEVILLE (42).—*Entocoma* in *Holothuria* sp.; HARRINGTON (152).—(c) Of *Echinus esculentus*, complete list, incl. flagellate *Oikomonas echinorum*; CUÉNOT (75) p. 297, fig. 121.—Mollusc, *Montacuta ferruginosa* commensal with *Echinocardium cordatum*; ALLEN & TODD (7) p. 188.—*Pionodesmotes phormosomae* and its galls; RICHARD (282) pp. 80, 82, figg. 30, 32.—Spines of *Ech.* [Cidarid] bored by some organism in Danian of Seeland; GRÖNWALL (144).—(d) Gastropod *Thyca* on *Stellaster incei*; BEDFORD (25) p. 295.—*Thyca* and *Stylifer*, molluscs parasitic on *Linckia*; HUBRECHT (165) p. 328.—(e) An amphipod crustacean with thoracic leg adapted for clinging to arms of *Ophiura brevispina* which it resembles in colour; GRAVE (135) p. 85.—(f) Of *Antedon*, complete list, incl. holotrichous Infusorian non-descr.; CUÉNOT (75) p. 262, fig. 95.—*Hippolyte* a macrurous crustacean commensal with *Antedon rosacea* and simulating its varied colour; MALARD (220) p. 28.—*Saxicava* boring stem of *Acrochordocr.*; LISSAJOUS (195) p. 16.
- ix. **Echinoderms as Food**:—Fuegians eat sea-urchins and starfish in fabulous quantities, till their stomachs are tight as drums, notwithstanding continued indigestion due to economical methods of cooking; CARBAJAL (55) pp. 411, 412.—*Diadema saxatile* eaten by Malays; BEDFORD (25) p. 277.—*Strongylocentrotus* eaten by *Vulpes lagopus* in winter; LUCAS (208) p. 126.—*Hoplodactyla* [sic] eaten by *Luidia*; BEDFORD (25) p. 293.
- x. **Echinoderms as Geological Agents**:—*Toxopneustes* and *Stichopus* swallow and triturate shells, thus forming shell sand; VERRILL (340) p. 330.
- Echinoderm breccia in Hauterivian of Swiss Alps; TOBLER (329) p. 145.—Bed 15 cm. thick composed of *Rhabdocidaris horrida*; STRUEBIN (324) p. 336.—Brèche récifale à débris d'Echinides et de polypiers au sommet du Tithonique d'Aizy, Alpes françaises (p. 14), "couches entièrement constituées par des débris de *Cidaris cornifera*" in Aptian of Isère (p. 82); KILIAN & LORY (170).—Remanié fragments of Upper Danian Echinoderms form a conglomerate of Paleocene age, of which blocks are found in drift of Rügen and elsewhere (see III, B, ii, f); DEECKE (84).—Crinoid limestone, "marmarone" in Sinemurian of Central Appenines; MORENA (233) p. 183.—Bajocian *Murchisonae*—*Sowerbyi* beds, "Spatkalks"—Calcaire à entroques; TOBLER (328) p. 289.

## (E.) MISCELLANEOUS.

i. **Research and Instruction**:—

- a. **Preservation**:—Collection and preservation of *Echinoderma* for museum purposes; BRITISH MUSEUM (47).—Formalin destroys spicules of *Synapta*; HARTLAUB in DOEDERLEIN (93) p. 234.—Ice-cold alcohol suggested for preservation of *Hol.*; VERRILL (342) p. 583.
- b. **Methods of research**:—Improved methods of studying segmenting ova; HAMMAR (149) p. 323.—How to rear *Ech.* larvae; MACBRIDE (213, 215).—Methods of preparation for study of minute anatomy of *Echinus*; CUÉNOT (75) p. 299.—Microscope sections of



- fossil Echinoid spines; HESSE (159) p. 193.—Microscopical examination of larva of *Ophiura brevispina*; GRAVE (135) p. 83.—Methods of preparation for study of minute anatomy of *Antedon*; CUÉNOT (75) p. 263.—Action of various reagents and stains on muscles and ligaments of *Antedon*, preparation of sections; BOSSHARD (44) pp. 72, 73, 88–90.
- c. **Museum Exhibits and Collections**:—List of historical specimens of Devonian *Ast.*, *Crin.*, *Cyst.*, and *Blast.* in Amer. Mus. Nat. Hist.; WHITFIELD & HOVEY (351) pp. 196–200.—Types of Conrad's Syrian fossils, incl. *Holaster syriacus*, *Echinus syriacus*, and *Cidaris* spines, found at Yale Univ.; BEECHER (26).—Mortimer Museum, Driffield, Chalk Echinoderms; SHEPPARD (305) p. 67.—Geological collections of Caucasian Museum, Tiflis; LEBEDEV (192).—List of fossil *Crin.* found near Mâcon, with the local collections and museums in which each sp. is represented; LISSAJOUS (195).—Collection of Niagara Echinoderms, Dr Johnston Pettit at Grimsby, Ont.; GRANT (133).
- Mode of preparing *Uintacr. socialis* for exhibition; BEECHER (27).—Preparations illustrating endoskeleton, joints, and muscles, in Mus. R. Coll. Surgeons; STEWART (318).
- d. **Instruction**:—Text-book account; PERRIER (262) pp. 244–276.—Ditto, elementary; PARKER & HASWELL (258) pp. 157–177.—Ditto, Spanish; SEGOVIA Y CORRALES (304).—Cram-book of facts of zoology, with references to Echinoderms passim, and system pp. 221–227; ECKSTEIN (102).—Questions and answers on *Echinoderma*; CATECHISM SERIES (58) pp. 67–74.—General, popular account, with diagram section of Starfish and picture of Echinoderms in an aquarium; SCHMEIL (300) pp. 459–464.—Palaeontology, full account with notes and revision by WACHSMUTH, SLADEN and others; ZITTEL & EASTMAN (369).—Numerous lithogr. figures of *Ech.*, *Crin.* of various geol. ages; TOULA (332).—Elementary lessons and experiments on *Asterias vulgaris* (p. 357), photographs of *Arbacia*, *Clypeaster*, *Echinarachnius*, *Archiaaster*, *Amphiura* (pp. 183–188); DAVENPORT (80).
- ii. **Economics**:—Small effect of man's war on starfish and holothurians (p. 13), injurious effects of trawling on *Oph.* and *Ech.* but not on *Hol.* and *Ast.* (p. 39); McINTOSH (216).—Trepang fishery (*Hol.*) in Russian waters; KUSNETZOW (185) p. 84.
- iii. **Bibliography**:—Guide to literature of *Echinoderma* generally (p. 35), of *Pelmatozoa* (p. 211), of *Hol.* (p. 236), of *Stelleroidea* (p. 279), of *Ech.* (p. 238); BATHER (19).—Review of recent work; LUDWIG (211): ROULE (287).—List of writings,—on recent Echinoderm morphology; CUÉNOT (74) p. 458.—Relating to oceanic explorations of Prince of Monaco; RICHARD (282) pp. 123–140.—On Arctic *Hol.*; LUDWIG (209) pp. 172–178.—On littoral *Ech.* sub-antarctic America; MEISSNER (229).—On Arctic *Ast.*; LUDWIG (210) pp. 496–502.—On Arctic *Oph.*; GRIEG (139) pp. 282–286.—On recent *Oph.*, 608 titles; HAMANN (148) pp. 749–774.—On W. Indian *Oph.*, selected; VERRILL (341) pp. 383–385.—On Italian Miocene *Crin.*; NOELLI (243) pp. 3–5.—On Silurian *Crin.* chiefly American; WELLER (348) pp. 57–60: omissions supplemented; BATHER in Review.
- iv. **Historical, Popular notions, &c.**:—Obituary and appreciation of the work of W. P. Sladen; HOWES (164).—History of research on *Oph.*; HAMANN (148) pp. 775–780.—History of classifications of *Crin.* (p. 138), of work on *Cyst.* (p. 40), *Hol.* (GOODRICH, p. 218), *Ast.* (GREGORY, p. 240), *Oph.* (GREG., p. 260), *Ech.* (GREG., p. 283): BATHER (19).

Holothurians called 'pepinillos de mar' in Spain; SEGOVIA y CORRALES (304) p. 166.—*Schizaster*, 'crozzi di morti' by Sicilian fishermen; COPPA (72) p. 36.—*Crin.* columnals, 'Indian beads'; BEEDE (29) p. 26.

## (F.) AUXOLOGY.

- i. **General Principles:**—Recapitulation, stalked stage of *Antedon*; BERGH (32) p. 247.
- ii. **General Accounts:**—Of Echinoderm ontogeny, in so far as it throws light on phylogeny; BATHER (19) pp. 3-19.—Outline of life-history of *Echinus esculentus*, up to *Pluteus* stage; CHADWICK (59) p. 22, pl. v.—Ontogeny of *Oph.*; HAMANN (148) pp. 849 et sqq.—Development of *Ophiotrix fragilis* "observations personnelles"; APOSTOLIDÉS (17) p. 322, figg. 143-145.—Development of *Antedon*; CUÉNOT (75) p. 259, figg. 105-107.
- iii. **Formation of Gonads:**—In *Oph.*; HAMANN (148) p. 849.
- iv. **Oviposition, Fertilisation, and Segmentation:**—Sexual maturity correlated with size, which in turn depends on food-supply, proved by *Asterias forbesi*; MEAD (228).  
Breeding periods,—of *Ech.*, *Ast.*, *Oph.*, *Hol.* at Beaufort, N. C.; WILSON (355) p. 350.—*Ophiocolex glacialis*, in summer months; GRIEG (139) p. 268.—Of *Ophiura brevispina*, and hour of spawning of this and of *Ophiopholis aculeata* and *Ophiocoma echinata*, 8-10 p.m.; GRAVE (135) p. 85.  
*Asterias rubens* at Wimereux ♂ ripe before ♀ (p. 763), *Echinocardium cordatum* shows protandric hermaphroditism (p. 762); GIARD (128).—Hermaphrodite Echinoderms, esp. a *Sphaerechinus granularis*, capable of self-fertilisation; VIGUIER (343).  
Ovum of *Asterias glacialis* (figg. 16, 29), process of fertilisation in *Toxopneustes* (figg. 21-23), of an Echinoid after fertilisation (figg. 24-26), polyspermy in *Strongylocentrotus* (p. 48, fig. 28); BERGH (32).—Fertilisation (p. 850), segmentation etc. (p. 851) in *Oph.*; HAMANN (148).—Ova and fertilisation of *Ophiura brevispina*; GRAVE (135) p. 87.—Parthenogenesis normal, though exceptional, in *Toxopneustes*, *Arbacia*, *Sphaerechinus*; VIGUIER (343).  
Protoplasmic connection between blastomeres as described in (123) Zool. Rec. 1887, proved from fresh researches on ova of *Echinus* and *Amphidetes* to be true cell-protoplasm and a primary structure, although secondary connections may form; HAMMAR (149).—General account of cellular physiology including references to Echinoderm ovum; WILSON (353).—For general physiological or cytological observations on ova or spermatozoa or sperm-ova of Echinoderms, see under II, F, viii.
- v. **Larval Stages:**—
  - a. Larval forms and their relations; HOUSSAY (163) pp. 327-330, figg. 267-272.—Of *Hol.*, *Ech.*, *Ast.*, *Oph.*, G. of Palermo, Jan. and Feb.; CAMPAGNA (54) p. 180.—At Falmouth during 1898, 1899; VALLENTIN (335).—Various, in plankton at Port Erin in 1900 with figures of *Hol.* pupa, Echinoderm blastosphere and gastrula, *Ast.* gastrula and later stages; CHADWICK (60).
  - b. See (a).
  - c. How to rear larvae; MACBRIDE (213, 215).—*Pluteus* of *Echinus esculentus*; CUÉNOT (75) p. 296.

- d. *Bipinnaria asterigera* in Valencia Harbour, Nov. 25; BROWNE (49) p. 685.
- e. Development, structure, and terminology of *Ophiopluteus*, with the various "species" after Mortensen; and discussion of the larvae of *Ophiura brevispina* (s. *olivacea*) type, and of viviparous *Oph.*; HAMANN (148) pp. 853–862.—Development of *Ophiura brevispina*, pupa larva, description of stages at 36, 42, 48, 60, 66, 120, 132, and 192 hours, comparison with larval development of *Asterina gibbosa*, *Asterias pallida*, and *Antedon*, gastrula supposed formed by delamination, see further under vi, e; GRAVE (135).
- f. *Antedon* development,—popular notes; BURBIDGE (52): Larva compared with that of *Ophiura brevispina*; GRAVE (135) p. 98.

## vi. Organogeny:—

### a. *Echinodermata*:—

- 7, 10. Origin of coeloms and mesoderm; BERGH (32) pp. 159, 178, 180.—Ditto, relations to *Coelentera*; HOUSSAY (163) pp. 403, 404, figg. 353–356.

### b, c. *Holothurioides* and *Echinoidea*:—Vacant.

### d. *Asteroidea*:—

- 2. Goto's views as to relations of plane of symmetry in larva and adult *Asterina* combated, no secondary bending of pre-oral lobe to right; MACBRIDE (214). [cf. e, 2.]
- 6. Origin of hydrocoel in *Asterina gibbosa*, a true right hydrocoel formed, not from left coelom as Goto says; MACBRIDE (214).
- 7. Development of coelom and periaemal spaces in *Asterina gibbosa*, confirmation, with fresh figures, of his previous observations and criticism of Goto; MACBRIDE (214).—Relations of hydrocoel to enterocoel of larval organ; RITTER & CROCKER (283) p. 266.

### e. *Ophiuroidea*:—

- 2. Relation of larva to adult; HAMANN (148) p. 864.—Bilateral symmetry of larva of *Ophiura brevispina* believed to coincide with that of adult, and to confirm Goto's conclusions as to *Asterias pallida*; GRAVE (135) p. 96. [cf. d, 2.]
- 5. Skeleton; HAMANN (148) p. 868 et seq.
- 6. Discussion of views as to origin of hydrocoel; HAMANN (148) p. 862.—Hydrocoel independent outgrowth from archenteron, said to rotate through 360°; stone canal arises before dorsal pore and in radius 5, afterwards moving to r. adradius between 5 and 1, origin of podia, buccal tentacles formed *after* the next proximal pair; GRAVE (135).
- 7. Formation of coelom; HAMANN (148) p. 862.—Epigastric or aboral enterocoel supposed to arise from right anterior enterocoel; origin of periaemal ring from pouches of hypogastric enterocoel and from l. anterior enterocoel, the latter being in interradius 5–1, and subsequently forming inner periaemal ring; GRAVE (135).
- 9. Epidermis and nervous system; HAMANN (148) p. 867.—Origin of nervous system and subneural spaces [=epineural canals, Auctt.] in *Ophiura brevispina*; GRAVE (135).

### f. *Crinoidea*:—

- 12. Rudiment of gonads appears in [posterior] interradius CD of stalked larva, in no connection with axial organ, but close to an aboral sinus and lacuna as in *Hol.*, and as supposed to have been the case in *Cyst.*; RUSSO (292).



## vii. Post-larval Growth-stages :—

- c. *Echinoidea* :—Addition of coronal plates, measurements of test and plates, growth of spines in specimens of *Rhabdocidaris annulifera* from 8 mm. to 57 mm. diam. (p. 275), measurements of 7 individuals of *Temnopleurus toreumaticus* from 24.5 to 37 mm. diam. (p. 281), growth-stages of *Laganum depressum* and *L. decagonale* figd., approximation in young (p. 284, pl. xxiii); BEDFORD (25).—Changes in composition of major ambulacra during growth in *Hemicidaris*; LAMBERT (186) p. 477.
- d. *Asteroidea* :—Rate of growth and consequent age of sexual maturity normally is entirely dependent on food-supply, as proved by observation of *Asterias forbesi*; MEAD (228).—Addition of rays in *Pycnopodia helianthoides* fully described, compared with *Labidiaster*, *Heliaster*, and contrasted with *Brisinga*; RITTER & CROCKER (283).—Neanic *Asterias rubens* (pl. ix), *A. hyperborea* (p. 199, pl. v), old and young *Rhagaster tumidus* compared (p. 221, pl. ix), of *Pteraster obscurus* (pp. 213, 215); DOEDERLEIN (93).
- e. *Ophiuroidea* :—Age-differences in *Ophiacantha* increase difficulties of determining spp. (p. 322), viviparous with 6-armed young *Ophiacantha anomala* (p. 335); VERRILL (341).—Young of *Euryale studei*, with disc 2–7 mm. diam., descr.; LORIOL (207).—Young individuals of *Gorgonocephalus eucnemis* and *G. agassizi* with diameter of disc 2–25 mm., descr. and figd. (pp. 269–271), large, old, individuals of *Amphiura sundevalli*, their differences from younger, esp. in dorsal plating of disc (p. 266); GRIGG (139).
- f. *Crinoidea* :—Development of *Agaricocr.* inferred from variations of adult structure [ontogenetic evidence not apparent]; KLEM (173).—*Untacr. socialis* varying from 20 mm. to 70 mm. in diameter on a single slab; BEECHER (27).
- h. *Blastoidea* :—Growth stages of *Granatoblastida* (p. 246), of *Orophocr. stelliformis* (p. 249), of *Granatocr. mutabilis* (p. 250); ROWLEY (291).

## viii. Developmental mechanics and Experimental Embryology :

—General discussion of the determination-problem in embryology, with reference to Boveri, Conklin, Loeb, Delage, Driesch, Fiedler, Iwanzoff, Morgan, Vernon, Wilson & Matthews, Zoja, and others; HEIDER (155).—General discussion of relations of ♂ and ♀ elements in fertilisation, with special reference to Boveri (25 Zool. Rec. 1893), (16 Zool. Rec. 1895), GIARD (103) Zool. Rec. 1899, and DELAGE (34) Zool. Rec. 1898; LE DANTEC (193).—General account of experiments on developing ova and conclusions, including references to Echinoderm ovum, with figures; WILSON (353).

Formation of chromosomes and centrosomes in *Echinus* (*Psamm-echinus*) *microtuberculatus*; BOVERI (46) pp. 343–348, pl. xiii.—Pseudopodial processes from unripe ova of same; PROWAZEK (274) p. 305.—Duration of vitality of ova of *Echinus sphaera* in sea-water, the period most favourable for fertilisation, abnormalities of segmentation and polyspermy when fertilised too early or too late after emission; GEMMILL (125) pp. 163, 164.—Practical instructions for inducing artificial fertilisation and polyspermy in Echinoderm ova; BERGH (32) p. 275.

Spermatozoa of *Ech.*,—locomotion; PROWAZEK (274) p. 308 : about 7 inches in still water; GEMMILL (125) p. 172.—Duration of vitality in (p. 170), influence of sea-water on vitality and activity (p. 168), activity prolonged by feeding with bouillon (p. 178); GEMMILL (125).

Over-ripening, effect of cold, staining intra vitam, parthenogenesis; HERTWIG (158).—Successful fertilisation of fragmentary and enucle-

ated ova, merogony, merogonic hybrids between *Echinus*, *Strongylocentrotus*, and *Sphaerechinus*, showing that chromosomes have no individuality and absence of nucleus may even favour fertilisation; DELAGE (85).—Discussion of the work of O. and R. Hertwig (1887), Boveri (1889), Morgan (1893), Loeb (1899), and reply to the criticism of his own work by Giard (1899) and Le Dantec (1899) with reassertion of his views on fecundation and merogony, all deduced largely from experiments on Echinoderm ova; DELAGE (86).—Criticism of Delage; ANDREWS (14); LE DANTEC (194).—Discussion of DELAGE (43) Zool. Rec. 1898, (67) Zool. Rec. 1899, LOEB (152) Zool. Rec. 1899, and ZIEGLER (230) Zool. Rec. 1898; THOMSON (327).—Segmentation in enucleated fragments of ova of *Psammehinus*; PROWAZEK (274).—A ymase 'spermase' extracted from spermatozoa, and a substance modified by it 'ovulose' extracted from ova, of *Echinus esculentus*, with criticism of PIERI (190) Zool. Rec. 1899; DUBOIS (98).—Criticism of PIERI and DUBOIS, extract of spermatozoa induces incomplete segmentation in unfertilised ova of *Sphaerechinus granularis* and *Arbacia pustulosa* respectively; WINKLER (358).

Absence of calcium from water causes separation of cells in segmenting ovum, in larvae, and in larval tissues of *Echinus* and *Sphaerechinus*, by acting on the connecting layer of the cells, but addition of calcium checks, and to some extent reverses, the process; HERBST (156).—Isolation of blastomeres in decalcified sea-water, different action of animal and vegetative elements, limits of gastrulation and pluteus-formation, studied in ova of *Echinus* and *Sphaerechinus*; DRIESCH (96).—Development of isolated segmentation cells, general resumé; BERGH (32) p. 196 and (33).—Complete ova or blastulae of *Sphaerechinus granularis* and *Echinus microtuberculatus* respectively, caused to fuse into one, which produces an individual and harmonious pluteus; DRIESCH (97).—Abnormal larvae experimentally produced, general resumé; BERGH (32) p. 212.

Hybrid larvae,—*Sphaerechinus* ♀ × *Strongylocentrotus* ♂ vary in type according to season, i.e. according to maturity of ♂ or ♀, and are fewer in proportion as ova are stale, but contrary is case with *Strongylocentrotus* ♀ × *Sphaerechinus* ♂; also *Echinus acutus* ♀ × *Strongylocentrotus* ♂, and × *E. microtuberculatus* ♂; but *E. acutus* ♀ × *Sphaerechinus* ♂, and × *Arbacia* ♂, and × *Echinocardium cordatum* ♂, also *Dorocidaris* ♀ and ♂ × *Sphaerechinus* and *Arbacia* ♂ and ♀, were less successful or quite failures; VERNON (337).—*Psammehinus miliaris* ♀ × *Asterias rubens* ♂, produce blastulae; GIARD (127).

Effect of environment (sc. temperature and change of salinity) on growth decreases from time of impregnation onwards, in case of larvae of *Strongylocentrotus lividus* and *Sphaerechinus granularis*; VERNON (338).

Mitosis induced in unfertilised *Arbacia* ova by deoxygenation, heat, ether, chloroform, and alcohol; MATHEWS (226).—Ditto, to varying extent, by solutions of magnesium chloride, sodium chloride, and strychnine, and by freezing, with action of preserving fluids on the astrospheres thus formed; MORGAN (235).—Segmentation of ova of *Psammehinus* under influence of  $MnCl_2$  (pseudopodia formed) and  $MgCl_2$ , also under pressure; PROWAZEK (274).—Development of larvae of *Ech.* stopped by pure NaCl solution; LOEB (197).—Effect of Mg, K, Na, and Ca ions on segmenting ova of *Ech.* similar to their effect on ova of *Fundulus*, which is described (p. 393), criticism of Herbst's views as to substances necessary for development (n. 396): LOEB (198).—Effects of Mg, K, Na, Ca, and Li ions on \* of *Arbacia*, both separately and in conjunction, with

controlled; solutions which allow the formation of a skeleton in the *Pluteus*; attempt to produce blastulae in unfertilised ova, by treatment with various solutions but without altering the concentration of sea-water; a long series of experiments leading to result that unfertilised ova of *Arbacia* placed for two hours in a solution of equal parts of  $20n$   $MgCl_2$  and sea-water may reach pluteus stage; LOEB (199).—Experiments described in (199) repeated on unfertilised ova of *Strongylocentrotus franciscanus* and *S. purpuratus*, with additional precaution of sterilising sea-water, plutei produced; LOEB (201).—Development of unfertilised ova due not to the particular solution, but to concentration and increased osmotic pressure of surrounding medium, which causes abstraction of water from the ovum, successful results with same *Ech.* spp., also with *Asterias forbesi*; LOEB (202).—Short summary of preceding results and contrast with experiments on unfertilised ova of *Chaetopterus*, addition of K-ions without concentration induces development in this Annelid but not in Echinoderms; LOEB (203).—Criticism of Loeb's conclusions as to influence of chemicals in parthenogenesis; the results seem rather due to relative dehydration and consequent osmotic pressure; BATAILLON (18).—Experiments of Loeb repeated without success on ova of *Arbacia*, *Toxopneustes*, and *Sphaerechinus granularis*; VIGUIER (344).—Facts of normal parthenogenesis casting doubt on results of Loeb; VIGUIER (343).—Parthenogenetic partial development of *Asterias* ova under influence of  $MgCl_2 \cdot 6H_2O$ ; GIARD (127).—Parthenogenesis in *Ech.*, precautions needed to prove it, a criterion is the slowness of development, induced by saline solutions, experiments of Loeb (*supra*) defended against Viguiet's criticism (*supra*), but process due not to ions but to dehydrating action of the salts; GIARD (128).

### III. DISTRIBUTION.

#### A. GEOGRAPHICAL.

- i. **General**:—State of knowledge of distrib. of Echinoderma; ORTMANN (254) p. 91.—Inshore migration of *Ech.* probably due to food-supply, but may be connected with breeding; GEMMILL (125) p. 179.—Theoretical considerations of distrib. of spp. and var. of *Ech.* and *Ast.*, effect of habitat and isolation, specific centres; BEDFORD (25) pp. 272, 287.—Echinoderms of deep sea; CHUN (63) pp. 485–496.—Evidence against bipolarity afforded by Antarctic *Ech.* and *Oph.*; KOEHLER (181).—Contrast of Arctic with sub-Antarctic *Oph.*; GRIEG (139) p. 281: see also sub v, vi.
- ii. **Atlantic Ocean and adjacent Seas**:—General account of Echinoderma collected on voyages of Prince of Monaco, esp. spp. of *Dytaster*, *Styracaster*, *Freyella*, *Paragonaster*, *Hymenaster*, *Antedon*, *Pentacr.*, *Rhizoec.*; RICHARD (282) pp. 75–81.—N. Atlantic generally, *Solaster papposus* var. nov. *squamata*; DOEDERLEIN (93) p. 208.  
Scandinavia:—Norway. Fjords, popular account of fauna, incl. Echinoderms; GRIEG (140).—Kanstadtfjord on Hinnø, 68°–69° N., *Asterias stellionura*; NORDGAARD (246) p. 24.—Puddeffjord near Bergen, spp. of *Echinus*, *Strongylocentrotus*, *Asterias*, *Ophiocoma*, *Cucumaria*; NORDGAARD (245) p. 8.  
German coasts, popular account of Echinoderms; MARSHALL (225).—Holland, Zwijs, *Asterias*, *Echinocyamus*; LAMEERE (189) p. 21.—Belgium, key to spp. of Echinoderms; LAMEERE (186) pp. 30–37.  
British Coasts:—*Solaster papposus*, var. nov. *anglica*; DOEDERLEIN (93) p. 207.—Distribution of *Hol.*, *Ech.*, *Ast.*, *Oph.*, *Crin.* S.W.

- corner of I. of Man (pp. 38, 39, pl. i), in Port Erin Bay (pp. 49, 50, pl. iii); HERDMANN (157).—Port Erin, plankton, larvae of *Ech.*, *Ast.*, *Oph.*, and *Hol.*; CHADWICK (60).—W. Coast of Ireland, Valencia Harbour, *Hol.*, *Ech.*, *Ast.*, *Oph.*, *Crin.*, and nature of bottom; BEAUMONT (24) pp. 796, 797: *Bipinnaria* of *Luidia*; BROWNE (49) p. 685.—English Channel,—Salcombe Estuary, *Hol.*, *Ech.*, *Ast.*, *Oph.*; ALLEN & TODD (7) p. 187.—Falmouth, various larvae; VALLENTIN (335).
- French Coasts:—Channel, Atlantic, Mediterranean, commoner Echinoderms; CLEVES (70).—Key to all spp. of Echinoderms; ACLOQUE (1) pp. 454–466.
- Mediterranean:—G. of Palermo, larvae of *Hol.*, *Ech.*, *Ast.*, *Oph.*; CAMPAGNA (54) p. 180.—Coasts of Morocco, the Arctic sp. *Elpidia glacialis*, also n. spp. of *Ankyroderma*; PERRIER (264) p. 177.—Black Sea, Echinoderm fauna restricted to *Synapta* 1 sp., and *Amphiura* 2 spp., all very small, but *Ech.* spines are brought in by the Bosphorus under-current; MURRAY (238) pp. 685, 695.
- N.W. Coast of Africa:—Liberia, n. sp. of *Ophiocnemis*; LORIOL (207).
- American Coast:—Distrib. of *Ophiura brevispina*; GRAVE (135) p. 84.
- Canada, list of *Ech.* dredged by 'Challenger'; AMI (10).—Wilmington, N. C., *Asterias*, *Arbacia*, *Toxopneustes*; WILSON (354).—Beaufort, N. C., occurrences and breeding periods of *Ech.*, *Ast.*, *Oph.*, *Hol.*; WILSON (355) p. 350.—West Indian region,—complete list of *Oph.*, spp. of *Ophiura*, *Ophiopeza*, *Pectinura* Forbes, *Ophiopaepale*, *Ophioplepis*, *Ophiozona*, *Ophioceramis*, *Ophiothyreus*, *Ophiermus*, *Ophioglypha*, *Ophiocten*, *Ophiomusium*, *Ophiolipus*, *Ophiomastus*, *Ophiophyllum*, *Ophiopyren*, *Ophiocoris*, *Ophiotrix*, *Ophiocoma*, *Ophiopsila*, *Ophiactis*, *Amphiura*, *Amphipholis*, *Amphiodia*, *Amphioplus*, *Amphilimna*, *Ophiocnida*, *Hemipholis*, *Ophiophragmus*, *Amphilepis*, *Ophionema*, *Ophioneophthys*, *Ophionereis*, *Ophioplax*, *Ophiostigma*, *Ophiocytra*, *Ophiacantha*, *Ophialcaea*, *Ophiacanthella*, *Ophiomitrella*, *Ophiolimna*, *Ophiopora*, *Ophiopristis*, *Ophiotreta*, *Amphipsila*, *Ophiomitra*, *Ophioplinthaca*, *Ophiocamaz*, *Ophiothamnus*, *Ophiolobes*, *Ophioblenna*, *Ophiotoma*, *Ophiochondrus*, *Ophiochondrella*, *Ophiocolez*, *Ophioclasma*, *Astrogeron*, *Ophiobyrassa*, *Ophiomyces*, *Ophiocelus*, *Ophiomyza*, *Ophiodera*, *Hemieurola*, *Ophioplus*, *Sigsbeia*, *Ophiobranchion*, *Astrophyton*, *Gorgonocephalus*, *Astrocnida*, *Astrogomphus*, *Astroporpa*, *Astroschema*, *Ophiocreas*, *Astronyx*; VERRILL (341) pp. 372–382.—Jamaica,—Kingston Harbour, Old Harbour, Portland Bight, *Hol.*, *Pentaceros*, *Luidia*, *Oph.*, *Toxopneustes*, *Cidaris*; DUERDEN (100) p. 613: Bluefields Bay, *Toxopneustes*, *Hipponoz*, *Echinometra*, *Cidaris*, *Oreaster*, *Astrophyton*; DUERDEN (101) p. 620: near Port Antonio, *Synapta*, *Muelleria*, *Stichopus*, *Chiridota*, *Toxopneustes*, *Cidaris*, *Echinometra*, *Diadema*, *Hipponoz*, *Echinoneus*, *Brisus*, *Clypeaster*, *Mellita*, *Pentaceros*, *Linckia*, *Ophiocoma*, and spp. indet.; CORANT (71).—Bermuda, added spp. of *Ophiura*, *Ophioplepis*, *Ophiotrix*, *Ophiocoma*, *Ophiopsila*, *Ophiactis*, *Amphipholis*, and *Synapta*; VERRILL (342).

- iii. Indian Ocean and adjacent Seas:—Echinoderms dredged by ss. 'Valdivia,' spp. of *Asthenosoma*, *Brissopsis*, *Dorocidaris*, *Echinothrix*, *Euclidaris*, *Phormosoma*, *Porocidaris*, *Schizaster*, *Spatangus*, *Sperosoma*, *Asterias*, *Bathylbiaster*, *Brisinga*, *Culcita*, *Diplocaster*, *Gnathaster*, *Luidia*, *Pontaster*, *Porania*, *Solaster*, *Styracaster*, *Zorocaster*, *Amphiura*, *Astrophisura*, *Ophiacantha*, *Ophiocten*, *Ophioglypha*, *Ophioplinthus*, and n. spp. of *Pelagothuria*, *Dermatodiadema*, *Echinus*, *Gymnopatagus* n. g., *Palasopneustes*, *Stereocidaris*, *Strongylocentrotus*, *Gnathaster*, *Hyphalaster*, *Nymphaster*, *Pectini*

*Pentagonaster*, *Styracaster*, *Asteronyx*, *Ophiopyren*, *Eudioer.*, *Metacr.*, *Pentacr.* [i.e. *Iocr.*], *Rhizocr.*, the chief locc. being Cocos Is., S. Nias Channel, Zanzibar, Somali coast, Bouvet Id., Agulhas bank, G. of Aden, Maldives, G. of Guinea, Siberut Str., and Diego Garcia; CHUN (63).—*Oph.* collected by the 'Investigator' from 0 to 40 fms., list of 49 spp. of which 13 spp. and 2 varr. were new to science, figures of n. spp., but not of n. varr. ["il est à désirer que les zoologistes.....publient des descriptions accompagnées de dessins" p. 3], total number of Indo-Pacific spp. of *Oph.* given as 193; KOEHLER (179).—List of *Spatangoidea* in Indian Museum; ANDERSON (11) p. 10.

Red Sea, plankton, *Plutei* and young *Ast.*; STEUER (317) p. 412.

Laccadive Sea, *Pourtalesia* (p. 10); between Bombay and Colombo, *Schizaster*, *Fibularia*, *Clypeaster*, *Peronella*, *Echinolampas*, *Eupatagus*, *Palaeopneustes* 200 at a haul, *Cidaris alcocki* 600–800 at a haul, *Lovenia*, *Zoroaster*, *Pontaster hispidus* 200 at a haul, *Brisinga* (pp. 6–8); Long Id. in the Moscos group, *Echinolampas* and *Pericosmus*; between Cocos Is. and Port Blair, *Coelopleurus*, *Platybrissus*, *Salenia*, *Trigonocidaris*, *Dorocidaris*, *Phyllacanthus*, *Rhabdocidaris*, *Laganum*, *Lovenia*, *Pericosmus* (p. 5); Andaman Sea, *Cionobrius* (p. 10); Andaman Is., Casuarina B., *Echinodiscus*, *Laganum* (p. 11), Paget Id., *Diadema*, *Brissus carinatus* (p. 13), Craggy Id., *Diadema*, *Echinothrix* (p. 13), Lamia B., *Echinostrephus* (p. 14); Invisible Bank, *Metalia*, *Echinoneus*, *Diadema*, *Cidaris*, *Parasalenia gratioa* (p. 16); ANDERSON (11).

Singapore and Malacca, spp. of *Rhabdocidaris*, *Diadema*, *Temnopleurus*, *Salinacia*, *Laganum*, *Arachnoides*, *Echinodiscus*, *Lovenia*, *Metalia*, and *Brissus*, and n. sp. of *Asthenosoma*, with general remarks on their distrib. (p. 272), spp. of *Archaster*, *Astropecten*, *Luidia*, *Iconaster*, *Goniodiscus*, *Stellaster*, *Anthenea*, *Pentaceros*, *Culcita*, *Palmipes*, *Retaster*, *Patiria*, *Asterina*, and n. spp. of *Craspidaster* and *Astropecten*, with general remarks on their distrib. (p. 287); BEDFORD (25).—Singapore, n. sp. of *Ophiocnemis* and *Euryale*; LORIOLO (207).—Ternate,—spp. of *Synapta*, *Chiridota*, *Stichopus*, *Holothuria*; MARENZELLER (221): list of *Ech.*, *Ast.*, *Crin.*, and *Oph.*, incl. *Ophiomastix luetkeni* n. sp., last also from Cebu; PFEFFER (267).

Christmas Id., list of *Ech.*, *Ast.*, *Oph.*, determined by F. J. Bell; ANDREWS (13) p. 116.

iv. **Pacific Ocean and adjacent Seas**:—N. American coast, list of *Ech.* with localities; ORCUTT (253).

Peru, n. sp. of *Ophidiaster*; LORIOLO (207).

New Zealand:—Otago, 10–30 fathoms, *Astrogonium*, *Asterina*, other *Ast.* and *Hol.*; BENHAM (30).—*Ophiocreas constrictus* n. sp., first *Astrophytid* recorded from N. Z. waters; FARQUHAR (107).

Japan, n. sp. of *Antedon*; LORIOLO (207).

v. **Arctic Ocean and adjacent Seas**:—Geogr. and bathymetric distrib. of Arctic and sub-Arctic *Hol.*, with table of comparative horizontal distrib. (p. 168), and of vertical (p. 170), and general discussion (pp. 169–172); LUDWIG (209).—Ditto *Ast.*, with special reference to Spitzbergen; LUDWIG (210) passim, esp. pp. 492–495.—From Tromsø to Spitzbergen and Bear Id., spp. of *Strongylocentrotus*, *Schizaster*, *Asterias*, *Solaster*, *Cribrella*, *Pteraster*, *Hymenaster*, *Hippasteria*, *Rhegaster*, *Ctenodiscus*, *Pontaster*, *Leptoptychaster*, *Ophioglypha*, *Ophiocten*, *Ophiopholis*, *Ophiacantha*, *Ophiocolex*, *Gorgonocephalus*, *Antedon*, *Cucumaria*, *Ankyroderma*, *Trochostoma*, *Synapta*, note specially *Solaster syrtensis*, *Pteraster obscurus*, and

*Ctenodiscus crispatus*; *Hol.* by LUDWIG, and notes on Stations by HARTLAUB: DOEDERLEIN (93).—Spitzbergen, distrib. of Echinoderms, esp. *Antedon eschrichti* in Storfjord; SCHAUDINN (296) pp. 235, 236.—West Spitzbergen, Bear Id. Tromsø, *Hol.*, *Ech.*, *Ast.*, *Oph.*, *Crin.*, with depth, temperature, sea-bottom; HARTLAUB (153).—Seas around Spitzbergen, N. of Norway, Murman coast, White Sea, spp. of *Ophiopleura*, *Ophiura*, *Ophiocten*, *Ophiopholis*, *Amphiura*, *Ophiopus*, *Ophiacantha*, *Ophioscolex*, *Gorgonocephalus*, followed by general discussion of distrib. of Arctic *Oph.*, comparison with sub-Antarctic; GRIEG (139).—Murman Coast, Echinoderms, pp. 447, 452, 458, esp. *Myriotrochus*, *Trochostoma*, *Psolus*, *Schizaster*, *Hymenaster*, *Pentagonaster*, *Rhegaster*, *Lophaster*, *Asterias*, *Ophiopleura*, *Ophioscolex*, *Antedon*; KNIPOVITCH (175).—White Sea, list of Echinoderms; SINITZIN (307): *Solaster*; SINITZIN (308).

- vi. **Antarctic Ocean and adjacent Seas**:—Subantarctic America and S. Georgia, littoral spp. of *Cidaris*, *Arbacia*, *Echinocidaris*, *Strongylocentrotus*, *Echinus*, *E. neumayeri* n. sp., *Hemiaster*, *Tripylus*, *Schizaster*, their general distrib. compared with the northern fauna; MEISSNER (229).—Collections of 'Belgica' *Sterechinus antarcticus* and *Amphipneustes lorioli* nn. genn. et spp., *Goniocidaris mortenseni* n. sp. and 14 n. spp. of *Ophioglypha*, *Ophiocten*, *Ophiopyren*, *Ophiopyrgus*, *Ophiomastus*, *Ophiacantha*, *Ophiocamax*, and *Amphiura*; KOEHLER (180): contrasted with Arctic and Subantarctic faunas; KOEHLER (181).—Echinoderms dredged by ss. 'Valdivia', *Pentactella*, and n. spp. of *Hyocr.* and *Bathycr.*; CHUN (63).—Patagonia, curious account of *Hol.*, *Ech.*, *Ast.*, *Crin.*; CARBAJAL (55) pp. 411, 412.

## B. GEOLOGICAL.

### (i) GENERAL.

Geol. distrib. of Holothurians, critical review of alleged fossil *Synapta*; SPANDEL (313).—The concentration in limited areas of numerous supposed species of *Dolatocr.*, *Batocr.*, and *Platycr.*, contrasted with the known distribution of plants and animals; KLEM (173) p. 176. *Crin.* columnals of uncertain age as drift in Pliocene sand near Bonn; STOLLEY (321) p. 46.

### (ii) CAINOZOIC.

- a. **General**:—Japan, *Crin.*, *Ast.*, *Ech.*, generic names only, with localities in Japanese; YOSHIWARA (361) pp. 1, 2.—Japan and Formosa, *Ech.*, generic and specific names in Latin, localities in Japanese; YOSHIWARA (362) pp. 8, 9.—Tertiary? of Pemba Id., E. Africa, *Salmacia*?, *Amblypneustes*, *Clypeaster*, *Marettia*; WOLFF (360).—Late Tertiary of Caldera, Chile, *Encope chilensis*; MORRIS (232) pp. 589, 609.
- b. **Pleistocene**:—Of various locc. on shore of Murman Sea, Arctic, *Strongylocentrotus droebachiensis* and *Ech.* spines (pp. 31, 32, 34, 36, 38–42), shore of White Sea, *Oph.* arm-fragments (p. 90); KNIPOVICH (176).—*Toxopneustes droebachiensis* beneath moraine at Bergen; REKSTAD (280).—Calabria, *Echinocyamus*; STEFANO (316): Monte Leone, list of *Ech.* with spp. of *Rhabdocidaris*, *Arbacia*, *Echinolampas*, *Brisson*, *Brissonopsis* new to loc.; AIRAGHI (4).—Nisetti near Aicastello in Catania, *Echinocyamus*, *Strongylocentrotus*, *Cidaris*; SCALIA (295) p. 9.



- c. **Pleiocene**:—Near Civitavecchia, *Clypeaster*, *Schizaster*, *Dorocidaris* MELI (230) p. 332.  
 Middle Pleiocene:—Esplugas near Barcelona, *Cidaris*, *Clypeaster* ALMERA (9) p. 760.  
 Lower Pleiocene:—Plaisancian, Gebel Chelloul, Egypt, n. sp. *Echinocardium*; FOURTAU (115) p. 62.—Plaisancian age of s. with *Clypeaster aegyptiacus* at Gizel, established by *Pecten* fa. DEPÉRET (89) p. 403.—*Ech.* in British Crag compared Amstelian, Scaldisian, and Diestian of Holland; HARMER (1905) p. 777, and (151) p. 330.
- d. **Meiocene**:—(Or? Pliocene) of Lindi, German E. Africa, *Clypeaster*, *Plesianthus*, *Echinolampas*, of Dunga, Zanzibar, *Maretia* and *peaster*; WOLFF (360).—Sommières (Gard), spp. of *Echinolampas* and *Scutella*; ROMAN (285).—Umbria, spp. of *Echinolampas*, *Clypeaster*, *Echinocyamus*, *Echinanthus*, *Schizaster*; VERRI & ANGELI (339) p. 259.—Appennines, *Spatangus*, *Conoclypeus*; NODDI (240) p. 415.—Camerina, *Brissopsis* and *Hemiaster*; MARIANI (1905) p. 3.—Near Syracuse, *Clypeaster*, *Scutella*, *Schizaster*; COPPA (72) p. 3.—Porto Torres in Sardinia, n. sp. of *Heteroclypeus*; AIRAGHI (1905) p. 3.—Theben-Neudorf, Hungary, *Clypeaster*, *Cidaris*; KORNHUBER (1905) p. 87: *Ech.*; TOULA (331) p. 8.—“Rudoltitzer Tegel” E. Bohemia, *Diadema*; PROCHÁZKA (271) pp. 20, 146.—Mähren [Moravia] *Diadema*; PROCHÁZKA (270) pp. 9, 19, 31.—Clay-partings of Tschokkra in Kertsch peninsula, also marls with *Pecten denudatus* of Tarchan, yield *Oph.* arm-vertebrae similar to *Ephippium* LOMNI ANDRUSOV (15).—Burma, *Cidaris* spp. and *Clypeaster* sp. (pp. 28, 44), paucity of Echinoid fauna how explained (pp. 95, 109), *Pseudodiadema* sp. in Pegu group?; NOETLING (244).—Formosa, limest. containing Echinoderm [i.e. Echinoid] spines; NEWTON & HOLMES (242).—Patagonian beds of various loc. *Hyechinus*, *Echinarachis*, *Schizaster*; HATCHER (154) p. 101.
- Upper Miocene:—Upper Mediterranean series, —Mezősögér 1 Torda, Siebenbürgen, *Spatangus*; northern half of Siebenbürgen basin, compiled list of *Ech.*; KOCH (178) p. 136.—Cacova, Siebenbürgen, *Clypeaster*; near Felső-Orbó, Siebenbürgen, *Clypeaster*, *Schizaster*; LOERENTHEY (204) p. 61.—Leythakalk in Siebenbürgen basin, compiled list of *Ech.*; KOCH (178) p. 168: *Echinocyamus*, *Scutella*, *Clypeaster*, and *Ast.*; LOERENTHEY (204) p. 59.—B. Leythakalk, near Csegez, Siebenbürgen, *Clypeaster* cf. *parvus* Leythakalk, *Echinolampas* and *Clypeaster altus*; ROTH v. TEI (286) p. 95, see also p. 98.—Vindobonian (between Tortonian and Helvetian) of Gebel Geneffé, Lower Egypt, *Ech.*; DEPÉRET (1905) p. 403.
- Middle Miocene:—of Vena near Monteleone in Calabria, n. sp. *Conoclypeus* and *Heteroclypeus*; AIRAGHI (3).—Of Castellnuovo Monti, *Cidaris*, *Conocr.* (p. 123), *Dorocidaris*, *Spatangus* (p. 123), *Del Bue* (87).—Upper Helvetian, “zona sabbiosa a *Pentacr. tuldii*”, near Torino, spp. of *Pentacr.* [i.e. *Isocr.*] 1 nov., *Conocr.* [= *Rhizocr.*], *Antedon* 6 nov., and *Actinometra* 1 nov., 4 others new to Italy; NOELLI (243).—Helvetian II, Gebel Ramleh, Suez, spp. of *Clypeaster*, *Echinolampas*, and n. sp. of *Schizaster* FOURTAU (115) p. 59.
- Lower Miocene:—Lower Mediterranean series, near Czere Siebenbürgen, *Macropneustes*? *compressus*; KOCH (178) p. 136.—Upper Burdigalian near Ste Croix (Jura Vaudois) *Cidaris*, *Pseudodiadema*; DOUXAMI (95) p. 420.—Langhian, Marne scagliose Montedoro in Central Appennines, *Maretia*, *Hemiaster*; MORANDI (1905) p. 420.

- (234) p. 477.—Upper Burdigalian of Gebel-Geneffe, Lower Egypt, *Echinolampas*, *Scutella*, *Lovenia*, *Cidaris*, *Echinoneus*; DEPÉRET (89) p. 402.—Aquitanian of Acqui, Visone, and Monte Capriolo, considered as base of Miocene, lists of *Ech.*: ALESSANDRI (6).
- Lower Miocene, Patagonian formation, *Cidaris antarctica*, *Toxopneustes praecursor*, *Cyrtoma posthumum*, all n. spp.; ORTMANN (255) p. 369.
- e. **Oligocene**:—Upper,—Lower Cerithiensichten, Offenbach am Main, n. sp. of *Synapta*; SPANDEL (313).
- Lower Oligocene:—Sand in clefts of Muschelkalk at Bernburg, *Ech.* spines & plates; MERKEL & FRITSCH (231) p. 68.—Tongrian of Bormida basin, n. var. *Echinolampas*; AIRAGHI (5).—Lower Oligocene or Ligurian, Egypt, *Ech.*; BLANCKENHORN (37) p. 459.—Priabonian near Kairouan in Tunis, various *Ech.*, esp. *Scutella* and *Clypeaster*; FLICK (111).—Priabona beds, summary of Echinoderm fauna (p. 288), for spp. vide sub *Bourgueticr.*, *Conocr.*, *Crenaster*, *Cidaris*, *Leiocidaris*, *Rhabdocidaris*, *Porocidaris*, *Coptosoma*, *Cyphosoma*, *Orthechinus*, *Leiopodina*, *Echinocyamus*, *Sismondia*, *Laganum*, *Clypeaster*, *Echinanthus*, *Echinolampas*, *Ditremaster*, *Linthia*, *Schizaster*, *Prenaster*, *Parabrisus*, *Toxobrisus*, *Lambertia*, *Breynia*, *Hypsopatagus*, *Euspatangus*; OPPENHEIM (251).
- f. **Eocene**:—at Ste. Croix, S. of France, *Echinus*, spp.; GROSSOUVRE (145) p. 65.—Plastic clay (Tarrassthone) of Fehmarn, Schleswig-Holstein, *Pentacr.*; STOLLEY (320) pp. 110, 133.—Vorderalpen,—Adelholzer Nummulitenkalk, *Conoclypeus*, *Echinocyamus* (p. 25): Eisenärzter beds, *Conoclypeus*, "*Bourgueticrinus goniaster* [sic] erhält eine ausserordentliche Häufigkeit" (pp. 26, 28): Kressenberger beds, *Conoclypeus* (p. 33), *Prenaster*, *Echinanthus*, *Echinolampas* (pp. 37, 44): Grenzsandstein at Maurerschurf, *Bourgueticr.*, *Cidaris*, *Echinanthus*, *Echinopsis*, *Linthia* (p. 84); REIS (278).—Kirrit, Somaliland, *Conoclypeus*? GREGORY (136).—Near Port Willunga, S. Australia, *Cidaris*, *Lovenia*, *Scutellina*, *Fibularia*, *Echinolampas*, *Echinus*, and *Antedon*; CLARK (64) p. 5.—Mulgundawa near Wellington, S. Australia, *Cidaris*, *Echinus*, *Monostychia*, *Scutellina*, *Fibularia*, *Astrogonium*, *Pentacr.*, *Antedon*; TATE (326) p. 111.
- Upper Eocene:—Marnes intragypseuses, Paris, *Macropneustes*; BOURSALT (45).—Upper Mokattam (=lower Bartonian), Egypt, *Ech.*; BLANCKENHORN (37) pp. 437–440.
- Middle Eocene:—S.E. Europe, horizon and distribution of *Euspatangus ornatus* discussed; OPPENHEIM (250) p. 115.—Untere Grobkalk Schichten, Gyaluer Alps, Hungary, *Psammecinus*, *Sismondia*; PÁLFI (256) p. 64.—Egypt,—n. spp. of *Coptosoma*, *Mistechinus*, *Brissopsis*; FOURTAU (115) pp. 31, 32, 42.—Lutetian II, characterised by *Euspatangus cairensis*, Lutetian I by *E. formosus*; FOURTAU (117) p. 56.—Lower Mokattam beds, *Ech.*; BLANCKENHORN (37) pp. 419–424.
- Lower Eocene:—Egypt,—Lower Libyan beds of Farafrah Oasis considered in part Mid. Eocene because of *Schizaster foveatus* and *Micropsis mokattamensis*; FOURTAU (116) p. 482.—Upper Suessonian or upper Libyan beds, *Ech.* (p. 415), Middle Suessonian or lower Libyan beds, Egypt, *Ech.* (pp. 410, 413), BLANCKENHORN (37).—Lower Libyan beds, distribution of *Conoclypeus delanoui*; FOURTAU (116) p. 483: its occurrence at Gebel Galala el Baharieh; FOURTAU (119).—Lower Libyan at Gebel Haridi. *Rhabdocidaris navillei* and spp. of *Conoclypeus*, *Echinolampas*, *pneustes*, *Plesiospatangus*, and "*naster*, *Megapneustes*, *Euspat*



sqq.), Farafrah Oasis, n. sp. of *Echinolampas* (p. 37), near Manfalout, Arabian Chain, n. sp. of *Euspatangus* (p. 54); FOURTAU (115).—Lower Suessonian or Kurkur beds, Libyan desert, *Ech.*; BLANKENHORN (37) p. 406.

Lowest Eocene:—Egypt,—Gebel Garah, W. of Assouan, *Bothriolampas*, *Porocidaris*; Gebel Gournah, W. of Thebes, formerly thought Cretaceous, but contains Eocene *Trachyaster*: FOURTAU (116) p. 481.—Montian of Paris basin, discussion of fauna, incl. spp. *Cidaris*, *Goniopygus*, *Echinanthus*, *Cassidulus*; MUNIER-CHALMAS (237).—Echinoderm-breccia [or rather conglomerate] found in drift at Rügen, contains rolled fragments of *Ananchytes sulcatus* et al., *Phymosoma princeps*?, *Goniaster*?, *Pentacr. bronni*, from the Upper Danian Saltholm Limestone, similar blocks in Holstein and Neubrandenburg; DEECKE (84): also in Mecklenburg; GEINITZ in Abstract: appears to be the same as a block with remains of *Pentacr.*, *Bourguetier*.? and *Ech.* found in boulder clay at Limhamn, Scania, and supposed topmost Cretaceous or lowest Tertiary; LUNDGREN (212).

### (iii) MESOZOIC.

a. **General**:—Table of distribution of principal *Ech.* spp. from Permian to Toarcian; LAMBERT (187) p. 44.

b. **Cretaceous**:—General distrib. of *Ech.* in Portugal, after De Lorient, with corrections, CHOFFAT (62) p. 5.

#### 1. Upper:—

Mokošin and Valy in Bohemia, *Ech.*; ZELIZKO (367) pp. 6, 10.—Podolia, spp. of *Holaster* and *Epiaster*; RADKEVICH (277) p. xxxvi.—Daghestan, *Ananchytes*, *Holaster*, *Offaster*, *Inaster* [sic]; LEBEDEV (192) p. 29.—Dakota division, Austin Chalk at Cow Creek, Rio Grande, Texas, *Cidaris*; VAUGHAN (336) p. 19.—Ripley beds at Wilmington, N.C., *Cassidulus*; HOLMES (160) p. 129.

Garumnian:—divided between Cretaceous and Tertiary, near Tercis and Angumé, in S. of France, Orbitolite marls in valley of Garonne, and glauconitic limestone, *Ech.* faunas; GROSSOUVRE (145) pp. 59, 60, 65, 67.

Danian:—Stevens Klint, *Ech.*; GRÖNWALL (142) p. 371.—Jylland, *Ananchytes*, *Temnocridaris*; GRÖNWALL (143).—Seeland, bored spines [of a *Cidarid*]; GRÖNWALL (144).—Maestrichtian,—Trimmingham, Norfolk, spp. of *Cardiaster*, *Cidaris*, *Cyphosoma* [i.e. *Phymosoma*], *Echinoconus*, *Echinocorys*, *Phymosoma*, *Salenia*, *Stegaster*, *Goniaster*, *Ophiura*, *Bourguetier*, *Pentacr.* [i.e. *Isocr.*]; BRYDONE (51) p. 12.—Hachauer beds and Oberstdorfer sandstone, *Ananchytis*; REIS (279) p. 94.—Ürmös, Siebenbürgen, *Stenonia*, *Cardiaster*; SIMIONESCU (306) pp. 9, 35 [placed in Lower Senonian in Zool. Rec. 1899].

Rancocas formation, New Jersey etc., spp. of *Pentacr.*, *Goniaster*, *Cidaris*, *Salenia*, *Pseudodiadema*, *Coptosoma*; CLARK (66) p. 339.

Senonian:—Kent, *Zeuglopleurus rowei* n. sp.; GREGORY (137).—Near Dieulefit, Drôme, France, *Micraster*, *Echinocorys*, *Echinoconus*; PAQUIER (257) pp. 427, 430, 436.—Near Pribbernow, Stettin, Prussia, spp. of *Bourguetier*, *Cidaris*, *Micraster*, *Echinocorys*, *Offaster*; SCHMIDT (301) p. cxcviii.—Westphalia, also Meudon and Italy spp. of *Diplodetus* n. g., *Plesiaster*, and *Cardiaster*, see IV, c; SCHLUETER (299).—‘Nierenthalschichten,’ *Micraster* (pp. 3, 4), ‘Götzreuterschichten,’ *Echinocorys* (p. 18); REIS (278).—Portugal,—*Pomelia delgadoi*, n. g. et sp. of *Ech.*; LORLOR (207): grès à *Hoplites vari*

- var. *marroti*, *Ech.*; CHOFFAT (62) p. 228.—Sirab, Persia, *Hemiaster*; FRECH (124) p. 307.—Pjatigorsk, Caucasus, *Ananchytes*, *Galerites*; LEBEDEV (192) p. 31.—Matawan formation, New Jersey etc., *Hemiaster parastatus* (p. 330), Monmouth formation, *Catopygus pusillus*, *Cassidulus florealis* (p. 335); CLARK (66). Upper Senonian,—at Sorel (Eure), *Micraster*; FORTIN (114).—Zone of *Belemnites mucronata*, at Gaillon (Eure), *Offaster*, *Echinoconus*, *Echinocorys*; FORTIN (113).—Rügen, *Cidaris*, *Phymosoma*, *Salenia*, *Echinoconus*, *Pyrina*, *Ananchytes*, *Cardiaster*, *Micraster*, *Goniaster*, *Oph.*, *Pentacr.*, *Bourguetier.*, *Eugeniocr.*, *Antedon*; DEECKE (82) p. 71, & (83).—Finkenwalde, &c., Pomerania, *Ananchytes*, *Galerites*, *Cardiaster*, *Micraster*, *Holaster*, *Salenia*, *Cidaris*, *Phymosoma*, *Pentacr.*, *Eugeniocr.*, *Bourguetier.*; DEECKE (82) pp. 55, 87, 90, 92, 94. Lower Senonian:—Chalk, Yorkshire, *Ech.* and *Marsupites* in Mortimer Museum; SHEPPARD (305) p. 67.—*Marsupites* zone of Brunswick, *Plesiaster*, *Cardiaster*, *Hemiaster*, *Ananchytes*, *Cidaris*, *Phymosoma* d'Arch. (pp. 417–420), concurrence of *Uintacr.* and *Marsupites* at Recklinghausen (p. 418); SCHLUETER (297).—Niobrara Chalk, localities of *Uintacr.* in Kansas, with mode of its occurrence; BEECHER (27).—Rochester, Gravesend, and Croydon areas, England, spp. of *Bourguetier.*, *Ophiura*, *Oreaster*, *Mitraster*, *Pentagonaster*, *Metopaster*, *Calliderma*, *Nymphaster*, *Cidaris*, *Cyphosoma* [i.e. *Phymosoma*], *Echinocorys*, *Echinoconus*, *Micraster*, *Epiaster*, *Holaster*, *Cardiaster*; DIBLEY (92).—Elbthalgebirge, Saxony, spp. of *Catopygus*, *Micraster*, *Cidaris*; PETRACZEK (265) p. 35.—Coniacian of Pont de Peille, Alpes-Maritimes, *Epiaster*, *Micraster*; RIAZ (281) p. 770.—Santonian age of beds at Abou-Roach near Gizeh containing *Echinobrissus waltheri* and other *Ech.*, not Turonian as R. B. Newton maintains; FOURTAU (120) p. 631: spp. of *Rhabdocidaris*, *Salenia*, *Orthopsis*, *Cyphosoma abbatei*, *Holotypus excisus*, and n. spp. of *Echinobrissus*, *Hemiaster*; FOURTAU (115) pp. 17–24: *Hemiaster* aff. *fourneli*, *Rhabdocidaris crameri*, *Echinobrissus waltheri*; BLANCKENHORN (36) p. 39.
- Senonian and Turonian:—off coast of Kent and Sussex, list of *Ech.*, *As.*, *Oph.*, and *Crin.* according to zones (pp. 361–363) with local details (passim) and special notes on spp. of *Cardiaster*, *Cidaris*, *Cyphosoma*, *Discoidea*, *Echinoconus*, *Echinocorys*, *Epiaster*, *Glyphocyphus*, *Hemiaster*, *Holaster*, *Micraster*, *Salenia*, *Zeuglopleurus*, *Bourguetier.*, *Marsupites*, *Pentacr.*, *Uintacr.* (see IV, C, F); ROWE (288).—At Lewes, Sussex, *Micraster*, *Cidaris*, *Echinocorys*, *Salenia*, *Holaster*, *Bourguetier.*; STRAHAN (322).
- Turonian:—of Rochester, Gravesend, and Croydon areas, England, spp. of *Bourguetier.*, *Pentacr.*, *Cidaris*, *Cyphosoma* [i.e. *Phymosoma*], *Echinocorys*, *Echinoconus*, *Micraster*, *Holaster*; DIBLEY (92).—Saxony, faunal lists, *Ech.*, *As.*, *Crin.* in zones of *Inoceramus labiatus* and *I. bronhiarti*; PETRASCHECK (266) passim. Upper Turonian,—Grislow Id., Pomerania, *Micraster*, *Ananchytes* (p. 36), Wollin Id., *Bourguetier.*, *Stellaster*, *Micraster*, *Infulaster*, *Holaster*, *Ananchytes*, *Cyphosoma*, *Cidaris*, *Hol.*; DEECKE (82) p. 42.—*Cidaris* spines among other fossils washed from now vanished Upper Turonian marls into the late Pleistocene loam of the former Kummerner See in Bohemia; MATOUSCHEK (227).—‘Weissenberger Pläner’ near Rynholec, N.W. of Prague, spine of *Cidaris reussi*; ZELIZKO (364) p. 175.—Near Cracow, *Galerites*, *Holaster*; WISNIOWSKI (359) p. 241.—Portugal, *Trochodiadema abramense* n. g. et sp. of *Ech.*; LORIOL (207).
- Turonian and Cenomanian:—Portugal, *Ech.*; CHOFFAT (224) pp. 150, 155, 159, 163, 166, 172, 179, 185, 192, 193, and

through previous pp.—Couche à *Ostrea columba*, at Mondégo *Anorthopygus*; CHOFFAT (61) & (62) p. 199.—Calcaire oolitique à *Anorthopygus*, at Mondégo, *A. michelini*, *A. orbicularis*; CHOFFAT (61).—Turonian age of beds at Abou-Roach near Gizeh, containing *Cyphosoma abbatei* and *Periaster roachensis*, not Cenomanian as Blanckenhorn maintains; FOURTAU (120) p. 630; *P. roachensis* n. sp. perhaps = the *Hemiaster fourneli* often quoted from this loc. FOURTAU (115) p. 24.

Cenomanian:—of Rochester, Gravesend, and Croydon areas, England spp. of *Discoidea*, *Pseudodiadema*, *Holaster*; DIBLEY (92).—S Dauphiné, France, *Discoidea*, *Holaster*, *Pseudananchys* (hitherto known only from Spain and Algeria); PAQUIER (257) p. 402.—Les Moulins, Alpes-Maritimes, *Holaster*; RIAZ (281) p. 768.—Urschelau, Bavarian Alps, *Discoidea*; SOEHLE (311) p. 41.—Nea Cracow, *Cidaris*, *Discoidea*; WISNIOWSKI (359) p. 240.—Silberbachthal, S. of Hermannstadt in Siebenbürgen, *Cidaris*, *Holaster*, BLANCKENHORN (38) p. 25.—'Hellkofener Mergel' (= Priesene Schichten), *Cidaris*, *Antedon*; BRUNHUBER (50).—Brancalione in Calabria, *Hemiaster*, *Epiaster*; DE STEFANO (90) p. 31.—Cenomanian with *Holactypus cenomanensis* and *Hemiaster pseudo-fourneli* a Gebel Galala el Baharieh, Egypt, supposed Senonian by Schweinfurth 1887; FOURTAU (119).—Beharieh Oasis, Egypt, n. spp. of *Cidaris* and *Rhabdocidaris*; FOURTAU (115) p. 6.—W. coast Red Sea Galala and Arabian deserts, *Hemiaster cubicus* (pp. 28, 37); Libyan desert, *H. lusitanicus*, *Cyphosoma abbatei*, *Heterodiadema libycum*, *Diplopodia marticensis*, *Lanthia oblonga*, *Claviaster cornutus*, *Echino brissus* (pp. 34, 36, 38); Sinai, Arabian desert, Beharieh Oasis Abu Roash (table, p. 33); BLANCKENHORN (36). [See also under Turonian.]

Lower Cenomanian.—Upper Greensand, zone of *Pecten asper*, Warminster, Wilts., characteristic *Ech.* (p. 68, figg. 44-46), Warminster beds generally, list of *Ech.* and *Crin.* (p. 246), 'gaize' of Devizes, *Ech.* (p. 258), of C. la Hève, *Ech.* (p. 399), of England generally, *Ech.*, *Ast.*, *Crin.* (p. 477); JUKES-BROWNE (169).  
Vraconian and Albion:—Red Chalk,—of Yorkshire wolds and Speeton, *Ech.*, *Crin.*; JUKES-BROWNE (169) p. 314.—Goulceby, Lincs., *Pentacr.*; CARTER (57).—Vraconian near Uzès (Gard), n. spp. of *Epiaster* and *Catopygus*; LORIOU (207).—Upper Gault of England, *Ech.*, *Crin.* (pp. 60, 477), Lower Gault of England, *Ech.*, *Crin.* (pp. 52, 477), Gault of Wissant, N. France, *Ech.* (p. 381), zone of *Ammonites inflatus* in Aube, Marne, and Ardennes, *Ech.* (p. 394); JUKES-BROWNE (169).—Phosphatic bed near Rencurel (Isère), *Diplopodia*, *Tylocidaris*, *Peltastes*, *Discoidea*, *Echinoconus*, *Catopygus*, *Caratomus*, *Hemiaster*, *Holaster*; KILIAN & LORY (170) p. 60.—Gault of Eze, Alpes-Maritimes, *Epiaster*, *Discoidea*, *Conulus*, *Holaster*; RIAZ (281) p. 769.—Albian, Matmatas, Algeria, *Toxaster* and *Crin.* fragments; FICHEUR (108) p. 564.

## 2. Lower:—

Breccia near Ste. Croix (Jura Vaudois), *Toxaster*; DOUXAMI (95) p. 419.

Comanche series, Fort Worth Limestone near San Felipe Springs, and Washita Limestone near Chispa, Rio Grande, Texas, *Enallaster* VAUGHAN (336) pp. 16, 84.

Apian:—"Couches à Orbitolines supérieures" Le Rimet, Les Ravis (Isère), *Salenia*, *Stomechinus*, *Tiaromma*, *Diplopodia*, *Cidaris*, *Stereocidaris*, *Phymosoma*, *Goniopygus*, *Codiopsis*, *Psammechinus*, *Magnosia*, *Pedinopsis*, *Orthopsis*, *Codechinus*, *Pygaulus*, *Holaster*, *Toxaster*, *Heteraster*, *Echinobrissus*, *Clypeopygus*, *Pyrina*, *Discoidea*, *Echinoconus*, and *Pentacr.*; KILIAN & LORY (170) pp. 56, 57.—Vaucluse

- n. sp. of *Cidaris*, Barcelona, n. sp. of *Antedon*; LORIOI (207).—(Lower) Matmatas, Algeria, *Epiaster*, *Salenia*, *Holactypus*, *Pseudodiadema*, *Toxaster*, *Enallaster*; FICHEUR (108) pp. 566-574, & (109).—Aptian? of Oued Cherf, *Epiaster restrictus* and *Cidaris cf. jullieni*; BLAYAC (39) p. 960.
- Barremian:—"Couche à Orbitolines inférieure" vallée de la Bourne (Isère), *Cidaris*, *Stereocidaris*, *Hemicidaris*, *Goniopygus*, *Echinobrisus*, *Pygaulus*, *Heteraster*; KILIAN & LORY (170) p. 53.—Barremian (?) of La Turbie, Alpes-Maritimes, *Toxaster*; RIAZ (281) p. 766.
- Neocomian:—Mt. Dealu Sasului, N.E. of Podu Dimbovitzei, Roumania, *Cidaris punctatissima*; POPOVICI-HATZEG (269) p. 550.—Karabagh, Caucasus, *Toxaster*; LEBEDEV (192) p. 15.—Urgonian, Hauterivian, and Valanginian of Portugal, revised list of *Ech.*; CHOFFAT (62) p. 184. Hauterivian,—near Choranche (Isère), *Ech.*, *Cidaris*, *Toxaster*, *Pseudodiadema*, *Rhabdocidaris*, *Rachiosoma*, *Pyrina*, *Cardiolampas*, *Dysaster*, *Asterias*, *Eugeniocr.*, *Pentacr.*, *Cyclocr.*; KILIAN & LORY (170) pp. 47, 48, 52. Valangian,—Aizy-sur-Noyarez, *Collyrites*, *Cardiolampas* (p. 15), Malleva, Alpes françaises, *Cidaris*, *Rhabdocidaris*, *Holactypus*, *Cardiolampas*, *Dysaster*, *Holaster*, *Pyrina*, *Pygurus*, and *Pentacr.* (p. 50), "couches du balcon de l'Echaillon" Alpes françaises, *Pyrina*, *Cidaris*, *Goniopygus*, *Millerocr.* (p. 37); KILIAN & LORY (170).—Neocomkieselkalk, Acherbrücke bei Stansstad, Switzerland, Spatangids, esp. *Toxaster retusus*, and above it an Echinoderm breccia of Hauterivian age; TOBLER (329) p. 145.—Valangin near Neuchâtel, faunal lists, spp. of *Pseudodiadema*, *Holactypus*, *Psammechinus*, *Toxaster*, *Pygurus*, *Phyllobrissus*, *Collyrites*, *Pyrina*, *Cidaris*, *Rhabdocidaris*; BAUMBERGER & MOULIN (23) pp. 159, 166, 167, 171, 176, 190, 200.
- c. **Jurassic**:—Catalogue raisonnée of spp. of *Pentacr.* [i.e. *Isocr.*], *Extracr.*, *Balanocr.*, *Cyclocr.* [i.e. *Acrochordocr.*], *Apiocr.*, *Millerocr.*, *Eugeniocr.*, *Phyllocr.*, *Tetracr.*, and *Antedon*, found near Mâcon, France, in Bajocian, Bathonian, Callovian, Oxfordian, Rauracian, and Kimmeridgian; LISSAJOUS (195).—From Inf. Oolite to Kelloway,—Brauer Jura of N. Swiss Jura Mts., *Sowerbyi* beds, Aargau, *Galeropygus* (p. 302), *Humphriesi* beds, *Rhabdocidaris* (p. 306), Hauptrogenstein, *Clypeus* (p. 310), Movelier beds, *Hemicidaris* (p. 312), *Ferrugineus* oolite, *Clypeus*, *Echinobrisus*, *Holactypus* (p. 315), *Varians* beds, list of *Ech.* (p. 320), *Macrocephalus* beds, *Holactypus*, *Collyrites* (p. 324); MUEHLBERG (236).—Near Cracow, *Clypeus*, *Collyrites*, *Holactypus*; WIŚNIEWSKI (359) p. 232.
- Freeze-out hills, Wyoming, *Pentacr.*, *Asterias*; LOGAN (205) pp. 113, 119, 130.—Shirley stage, Wyoming, *Pentacr.*; KNIGHT (174) p. 386.
1. **Upper**:—
- Karabagh, Caucasus, *Apiocr.*; LEBEDEV (192) p. 16.
- Portlandian (= Tithonian):—Bononian of Angoulême, *Hemicidaris*, *Echinobrisus*; GLANGEAUD (131).—"Brèche à *Cidaris glandifera* d'Aizy," *Cidaris*, *Rhabdocidaris*, *Diplocidaris*, & *Eugeniocr.* (p. 15), calcaire récifal d'Echaillon, Alpes françaises, *Cidaris*, *Diplocidaris*, *Rhabdocidaris*, *Dysaster*, *Grania*, *Millerocr.*, *Eugeniocr.* (p. 33); KILIAN & LORY (170).—Lombardy, *Collyrites*, *Metaporphinus*; MARIANI (222) p. 409.—(Upper) Mt. Dealu Sasului, N.E. of Podu Dimbovitzei, Roumania, *Cidaris glandifera*; POPOVICI-HATZEG (269) p. 550.
- Malm near Liestal, Switzerland, various locc., spp. of *Collyrites*, *Cidaris*, *Hemicidaris*, *Acrocidaris*, *Glypticus*, *Dysaster*, *Pygurus*, *Asterias*, *Balanocr.*, *Pentacr.* [i.e. *Isocr.*], *Apiocr.*, *Eugeniocr.*; HUENE (166) pp. 350-365.

- Kimmeridgian:—Pomerania, *Echinobrissus*, *Pseudodiadema*, *Cidaris*, *Hemicidaris*, *Holotypus*, *Pygurus*; DEECKE (82) p. 24.
- Sequanian:—Gialdessa a Graslej, Harrar, E. Africa, *Hemicidaris abyssinica*; ANGELIS D'OSSAT & MILLOSEVICH (16) p. 156.—Corallian, Teutoburger Wald, *Cidaris*; STILLE (319) p. 17.
2. Middle:—
- Oxfordian, Corps-de-Garde, Neuchatel, *Balanocr.*; ROLLIER & TRIBOLET (284). (Middle) "sphérites de la Croix," Switzerland, *Millericr.*, *Collyrites*, *Holotypus*, *Pseudodiadema*, *Goniaster*, *Cidaris* (p. 209), Rouges-Terres, *Balanocr.* (p. 214); KOBY (177).—Bernese Jura, *Cidaris*, *Pseudodiadema*, *Balanocr.*; LORIOL (206) p. 182. (Lower) Liesberg, Switzerland, *Millericr.*, *Cyclocr.* (p. 196), Châtillon, *Asterias*, *Balanocr.* (p. 200); KOBY (177).
- Callovian:—near Winckel, Ferrette, France, *Rhabdocidaris*, *Collyrites*; BLEICHER & MIEG (40).—Combe-Noire (Indre), *Collyrites*, *Echinobrissus*; BENOIST (31) p. 6.
- 2, 3. Callovian or Bajocian of Franz Josef Land, *Pentacr.* aff. *bajociensis*; POMPECKJ (268) pp. 51, 120.—Callovian or Bathonian, Bihendula, S. of Berbera, Somaliland, n. sp. of *Pseudodiadema*; GREGORY (136) p. 41.
3. Lower:—
- Sundance formation of S. Dakota, *Asterias dubium* [sic, ? a mistake in genus, as it is by implication a Mollusc] and *Pentacr. asteriscus*; DARTON (79) p. 388.
- Bradfordian near Chateauxroux (Indre) *Hemicidaris*; BENOIST (31) p. 5.
- Bathonian:—Dept. de l'Indre, France, numerous *Ech.*; BENOIST (31) pp. 3, 4.—Near Belfort (Haute-Saône) n. sp. of *Hemipodina*; LORIOL (207).—*T. maxillata* beds near Dormach, *Cidaris koechlini* (p. 301), Upper Bathonian, *Discoidea* marl, and *Clypeus sinuatus* (p. 303); TOBLER (328).—Hauptrogenstein, zone of *Stephanoceras blagdeni*, near Liestal, Switzerland, Echinoderm-breccia with crowns of *Cainocr.* [i.e. *Isocr.*] *andreae*; HUENE (166) p. 347.
- Vesulian or ? Bajocian of St. Gaultier (Indre), coral-reef with spp. of *Cidaris*, *Hemicidaris*, *Asterocidaris*, *Pseudodiadema*, *Stomechinus*, and n. spp. of *Diplocidaris*, *Gymnocidaris*, *Pseudodiadema*, and *Phymechinus*; LAMBERT (186).
- Bajocian:—near Argenton, *Pygaster*, *Pseudodiadema*; BENOIST (31) p. 3.—Zones of *Sonn. sowerbyi*, *Sph. sauzei*, and *Steph. humphriesi* near Basle, spp. of *Cidaris*, *Rhabdocidaris*, *Pseudodiadema*, *Hemipodina*, *Pedina*, *Collyrites*, *Pentacr.*, *Crenaster*; GREPPIN (138) pp. 186–192, 200, 202.—*Humphresianus* beds, Blauengebiet, *Cidaris* and *Rhabdocidaris* spp.; TOBLER (328) p. 291.—Zone of *Sonninia sowerbyi* near Basle, *Rhabdocidaris*, *Cidaris*, *Pentacr.*, *Cyclocr.*; STRUEBIN (324) p. 337.
- d. Lias:—Catalogue raisonnée of spp. of *Pentacr.* [i.e. *Isocr.*], *Extracr.*, *Balanocr.* found near Mâcon, France, in Hettangian, Sinemurian, Charmouthian, and Toarcian; LISSAJOUS (195).—Lias of l'Yonne, spp. of *Miocidaris*, *Plegiocidaris*, *Rhabdocidaris*, *Cidaris*, *Eodiadema*, *Diademopsis*, *Diadema*; also general discussion of *Ech.* of this age and older, with n. spp. of *Mesodiadema* and *Eocidaris*, and numerous n. genn.; LAMBERT (187).—Lias, Laila Mts., Caucasus, *Pentacr.* [wrongly supposed early Tertiary]; BONNEY (43) p. 226.
- Domerian of Brescia, spp. of *Pentacr.*, *Cidaris*, and *Polycidaris*; BETTONI (34) pp. 8–11.
- Zone of *Amm. margaritatus*, Lincoln, *Ophioderma* and *Pentacr.*; WALTON (346).—"Amaltheenthon" in Teutoburger Wald, *Cidaris*,

- Pentacr.*; STILLE (319) p. 13.—Lias  $\delta$  near Reutlingen, Württemberg, *Eugeniocr.*, *Cotylederma*, *Pentacr.*, *Cidaris*, *Microdiadema*; ZWIESELE (370) p. 20.
- Lower or Sinemurian,—Central Appenines, *Cidaris* spp. and *Diademopsis*; MORENA (233).—Valesacca in E. Carpathians, *Pentacr.*; UHLIG (334) p. 9.—Zone of *Ammonites capricornus* in Teutoburger Wald, *Pentacr.* (p. 13), beds with *Arietites obliquicostatus* in Teutoburger Wald, *Pentacr.* (p. 9); STILLE (319).
- Hettangian or Infra-Lias, "Psilonoten-thon," near Nellingen in Schwaben, *Cidaris*, *Pentacr.*; ENGEL (106) p. 240.—Zone of *Psiloceras planorbe* in Teutoburger Wald, Prussia, *Pentacr.*, *Cidaris*; STILLE (319) p. 7.
- Rhaetic sandstone near Nürtingen in Schwaben, *Ophioderma*; ENGEL (106) p. 242.
- e. **Trias**:—Bear Id. near Spitzbergen, *Ech.* quoted from Boehm; ANDERSSON (12).—Near Gereuth, Krain, Austria, *Cidaris* and *Encrinus*; KOSMAT (184) p. 90.—Province Kwei-tschou, China, *Entrochus rotiformis* n. sp.; KOKEN (182) p. 212.
- Upper:—Upper Cassian of Falzarego Valley, S. Tyrol, spp. of *Cidaris* and columnals of *Encrinus* and *Pentacrinus*; OGILVIE GORDON (132) p. 339 & (249) p. 309.—St. Cassian Limest., near Idria, Krain, Austria, *Encr. cassianus*; KOSMAT (184) p. 95.—Betw. St. Cassian and Raibler beds, 'Pachycardientuffe der Seiser Alp in Tirol', spp. of *Encrinus*, *Pentacr.*, and *Cidaris*; BROILI (48) p. 369: spp. of *Encrinus* and *Cidaris*; ZITTEL (368) p. 349.
- Middle:—Partnach-schichten, Labergebirg, Bayern, *Cidaris*; SOEHLE (311) p. 2.—Muschelkalk,—of Jukbühel, N. of Kötschach, Carinthian Alps, *Encrinus*; GEYER (126) p. 120.—Of Mts. Presolana, Lombardy, *Encrinus*; MARIANI (223) p. 1254.—(Lower) near Recoaro in Vicentin, *Dadocrinus gracilis* beds, with *Millerocr.*, *Ophioglypha*, *Aspidura* (p. 97), Brachiopod limestone, with *Encrinus*, *Pentacr.*, *Cidaris* (p. 101); TORNQVIST (330).—"Trias moyen—marbre grisâtre de Mong-Tze (Yun Nan). *Encrinus lilii-formis*? articles de la tige"; DOUVILLÉ (94) p. 595.

## (iv) PALAEOZOIC.

- a. **General**:—Synopsis of Palaeozoic *Asteroidea*, with distrib.; STUART (325) p. 206.—Lower Palaeozoic, Bohemia,—list of *Cyst.* after Barrande but revised according to Jaekel's classification and nomenclature; PERNER (261): distribution of *Crin.*, *Scyphocr.*, *Mariacr.*, *Abacocr.*, *Bohemiocr.*, *Beyrichocr.*, *Laubeocr.*, *Caleidocr.*, and *Ichthyocr.*; BATHER (21) pp. 102, 119.
- b. **Permian**:—Djulfá beds, Araxes gorge, Armenia, *Cyathocr.*, *Poteriocr.*?; FRECH (124) p. 285.—Greyish Marble of Yunnan-Y, near Ta Li Fou, China, *Crin.* columnals; DOUVILLÉ (94) p. 593.
- c. **Permo-Carboniferous**:—N. W. of Asia Minor, Tschamlyk of Tschobanoghlu near Tsinarli Teesme, columnals of *Poteriocr. quenedti* (p. 93), Ari Maghara, *Crin.* (p. 94); ENDERLE (105), pl. viii.
- d. **Coal Measures**:—Black marble, near Hai-Phong, China, *Pentremites*; DOUVILLÉ (94) p. 593.
- Cottonwood formation, Nemaha co., Neb., *Fusulina* limest., *Archaeocidaris* spines (pp. 5, 6, 7), *Crin.* columnals (p. 7); Wabenssee formation, Dunbar, Neb., *Zocr.*? *macrospina*, *Archaeocidaris*, *Crin.* columnals (p. 153), Cass co., Neb. *Z.*? (pp. 155, 157, 161, 165), *Archaeosia*



*phiocr. hemisphaericus* (p. 163); PROSSER (272).—Coal-Measure, Kansas, *Scaphiocr.*, *Zeacr.*, *Ceriocr.* [i.e. *Delocr.*], *Phialocr.* [i.e. *Aesiocr.*], *Erisocr.*, *Eupachycr.*, *Hydreionocr.*, *Agassizocr.*, *Archæodaris*, *A. agassizi*, which is a Burlington sp., *Oligoporus*; BEDE (29) pp. 26-50.—Upper,—Kansas, n. spp. of *Scaphiocr.*?; *Zeacr.*?; BEEDE (28).—Above Lehigh coal,  $\frac{1}{2}$  mile W. of Keokuk station, Indian Territory, U. S. A., *Eupachycr.*; GIRTY (1) pp. 542, 575. Lower,—Atoka quadrangle, Indian Territory, U. S. A., *Eupachycr.*; GIRTY (130) pp. 545, 573.

#### e. Lower Carboniferous:—

Millstone Grit near Abergavenny, S. Wales, *Crin.*; STRAHAN & GIBSON (323) p. 47.

Lists of fossils from the various limestones, coast of Northumberland, *Crin.* and *Archæodaris* (pp. 83-89) *Hol., Ech., Crin.* (pp. 131); SHARMAN & NEWTON in GUNN (147).—Lancashire, *Brachio-* n. g.; SOLLAS (312).—Viewforth, Fife, *Archæodaris* sp. and *Crin.* stems; KIRKBY (172) p. 490.—Lower and Upper Limestone, numerous localities in Fife, *Hydreionocr.*, *Platycr.*, *Poteriocr.*, *Archæodaris*, *Chiridota*, *Anchistrum*; PEACH (260) pp. 223, 244, 247, 248, 249.—Calcareous sandstone,—near Arbuckle, Kirkcudbright, Scotland, *Archæodaris*, *Crateriocr.*; PEACH (260) p. 65.—Fife, *Hydreionocr. globularis*, *Archæodaris* sp.; PEACH (260) pp. 223, 241.—Zone of *Spirifer tornacensis*, Arpatschai valley, Armenia, *Platycr.*, *Pachylocr.*, *Pentremites*; FRECH (124) p. 204. Carboniferous?, Timor in drift, *Granatocr.* and *Crin.* column; BOEHM (41) p. 555.—W. Australia, *Actinocr.*, *Platycr.*, *Poteriocr.*, *Pentremites* at Kimberley, *Cyathocr.* and *Poteriocr.* at Gascoyne; MAITLAND (217) pp. 14, 15.

Warsaw? (St. Louis) Limestone of Missouri, n. spp. of *Orbitremes* and *Pentremites*; ROWLEY (289).

Keokuk or Knob Limestone, near Salem, Ind., n. sp. of *Actinocr.*; WHITFIELD (350).

Burlington Limestone,—of Missouri, n. spp. of *Dorycr.*, *Batocr.*, *Eretmocr.*, *Agaricocr.*, *Codaster*, *Orbitremes*; ROWLEY (289). Louisiana, Mo., list of *Blast.*, *Cactocr. obesus* is from Upper Carboniferous (p. 251); ROWLEY (291).—Iowa, *Majesticrinus* [sic] and *Spirifer cotinus* [sic]; ORCUTT (252).

Kinderhook at Northview, Webster co., Missouri, *Crin.* column; WELLER (347).

Chouteau Limestone, Missouri, list of *Blast.*; ROWLEY (291) p. 25.

#### f. Devonian:—List of historical specimens of Devonian *Ast.*, *Crin.*, *Blast.*, *Cyst.* in Amer. Mus. Nat. Hist., with corrected horizons and localities; WHITFIELD & HOVEY (351) pp. 96-200.—Devonian (Silurian, or Carboniferous) at Valcarlos and Putzet near Barcelona "Phyllades avec *Encrinurus*"; ALMERA (9) p. 750.—Devonian, Cretaceous, —W. of Newtrain B., *Scaphiocr.*? (p. 146), *Bedruthan St. Sphaerocr.*, *Crin.* columnals (p. 147), Mother Ivey's B., *Crin.* col. (p. 146); FOX (121), and (122) pp. 346, 347, 351, 352, see also pp. 357, 358. Upper,—*Protaster* said by Destinez (71) Zool. Rec. 1899 to be from Assise d'Esneux is really from Assise de Souverain; DESTINEZ (91).

Middle,—Marzys and Nowa Wies, Poland, *Crin.*; GUERICH (1) p. 378.

Lower,—Bundenbach, *Palæosolaster*, *Echinasterias*, *Echinodiscus*, *Echinostella*, *Jackelaster*, n. genn. of *Ast.*; STUART (325) pp. 223-236.

Portage sandstone, Naples, N. Y. *Paropsonema*; CLARKE (68).

Middle,—Wapsipinicon stage, Upper Davenport beds, *Calceocr.*, *Megistocr.*, *Stereocr.* spp.; NORTON (248) p. 451.

Lower,—Oriskany of Becraft Mt., N. Y., *Edriocr. becraftensis* n. sp. (p. 62), elsewhere in N. Y., distrib. of *E. sacculus* (pp. 74, 75, 76); CLARKE (67).—Oriskany, distrib. of Echinoderm fauna, spp. of *Edriocr.*, *Homocr.*, *Technocr.*, and *Anomalocystis*; SCHUCHERT (303) pp. 292, 313.—Oriskany limestone, Peter's Valley, Sussex co., N. J., *Edriocr.*; WELLER (349) p. 43.—New Scotland beds, *Spirifer perlamellosus* zone, Nearpass, Sussex co., N. J., *Lecanocr.*; WELLER (349) p. 33.

g. **Silurian**:—Lists of genera and spp. of *Crin.* with geogr. distrib.; WELLER (348) pp. 47–56: criticism of these lists, with special reference to England and Scandinavia, and of the geological conclusions based on them; BATHER in Review.—Czerwona Gora, Poland, *Scyphocr.*; GUERICH (146) pp. 368, 373.—Oesel, Scania, and Britain, *Lagarocr.*; JAEKEL (168).

Wenlock Limest., England, *Cicerocr.* n. g.; SOLLAS (312).—England, occurrence of *Arachnocr.*, *Callicr.*, *Calpiocr.*, *Cordylocr.*, *Desmidocr.*, *Hapalocr.*, *Lyriocr.*, *Mariacr.*, *Patelliocr.*, *Pycnosaccus*, and *Stephanocr.*; BATHER in Review of WELLER (348).

Graptolithen-Schiefer des Steinboß bei Möseheid, also *Cardiola*-Schichten des Steinhornes, *Crin.*; DENCKMANN (88) p. 151.

Llandovery of Gembloux, Belgium, *Sphaeronis*; MALAISE (219) p. 197.

Lower Helderberg,—here called Helderbergian and assigned to Lower Devonian, distrib. of Echinoderm fauna and discussion of its value for stratigraphic correlation, spp. of *Homocr.*, *Melocr.*, *Corymbocr.*, *Mariacr.*, *Cordylocr.*, *Marsupiocr.*, *Herpetocr.*, *Edriocr.*, *Aspidocr.*, *Hadrocr.*, *Camarocr.*, *Lepadocr.*, *Sphaerocystis*, *Anomalocystis*, and *Protaster*; SCHUCHERT (303) pp. 277, 279.—N. Y., character of *Crin.* and *Cyst.*, *Coronocr.*, *Cordylocr.*, *Camarocr.*, *Brachiocr.*, *Aspidocr.* said to be confined to it; CLARKE (67) pp. 86, 91.—Delthyris Limestone of Missouri, n. sp. of *Troostocr.* and *Stribalocystis*; ROWLEY (289).—Square Lake, Maine, *Lyriocr.*; WILLIAMS (352) p. 55.

North Haven series of Penobscot Bay, Maine, *Ichthyocr.*, *Eucalyptocr.*; BEECHER in SMITH (310) p. 22: quoted by WILLIAMS (352) p. 36.—Upper Niagara. The distribution of *Crin.* in the sea extending from N. Europe, by the Arctic regions, to the Mississippi valley, with special discussion of the Chicago fauna, and description of spp. of *Cyathocr.*, *Botryocr.*, *Ampheristocr.*, *Myelodactylus*, *Thysanocr.*, *Cyphocr.*, *Gazacr.*, *Lampterochr.*, *Siphonocr.*, *Lyriocr.*, *Macrostylocr.*, *Melocr.*, *Eucalyptocr.*, *Callicr.*, *Chicagocr.* (n. g.), *Perischochr.*, *Marsupiocr.*, *Platycr.*, *Ichthyocr.*, *Lecanocr.*, *Stephanocr.*, *Zophocr.*, also of *Archaeocr.* previously known only from Trenton Limestone, and *Corymbocr.*, *Crotalocr.*, and *Pycnosaccus* previously unknown from America; WELLER (348).—Chicago canal excavations disclosed 60 spp. of *Crin.* some only found elsewhere in England and Sweden; RADDIN (276) pp. 307, 308.—Niagaran,—of N. Y., list of *Crin.* and *Cyst.* said not to pass up to Helderbergian; CLARKE (67) p. 93.—Hamilton, Ont., list of *Crin.* and *Cyst.*; GRANT (134) p. 130.—Missouri, n. sp. of *Stribalocystis*; ROWLEY (289).—Gower stage at Cowles quarry, Big Rock, Scott co., Ia., *Siphonocr.*, *Eucalyptocr.* spp.; NORTON (248) p. 438.—Niagara shales, Grimsby near Hamilton, Ont., *Stephanocr.*, *Caryocr.*, *Lyriocr.*.

Clinton or Niagara at New Sweden, N. Y. p. 51.



- Clinton group, Hamilton, Ont., *Palaeaster*, *Eucalyptocr.*, *Glyptocr.*; GRANT (134) p. 134.—Kentucky, D. D. Owen's identification of *Glyptocr. plumosus*, in 1857, criticised; FOERSTE (112) p. 72.
- h. Ordovician**:—Crinoid [or Cystid] limestone found near Sulitjelma in Lapland; SJÖGREN (309).—Near Mojcza, Poland, *Cyst.*; GUERICH (146) pp. 368, 370.—Fauquez in Brabant, Belgium, *Echinospaera munita*, *Sphaeronis punctatus*; MALAISE (219) p. 200.
- Caradoc:—Sambre-et-Meuse, Belgium, *Glyptocr.*, *Echinospaera*, *Sphaeronis*; MALAISE (218) p. 806: *Echinospaera baltica*, *Sphaeronis stellulifera*, *Glyptocr.*, *basalis*; MALAISE (219) p. 205.—Gembloux, Belgium, *Sphaeronis* (vel. *Echinospaera*) *stellulifera*; MALAISE (219) p. 196.—Assise à Cystidés, Montcada, near Barcelona, *Echinospaera*, overlaid by "Calcaire griotte à *Encrinus*"; ALMERA (8) p. 733-735 and (9) p. 743.
- Chasmopskalk near Loke in Lockne, Jemtland, *Caryocystis*; WIMAN (356).
- Bed d 4 at Staňkovka, S.S.W. of Radotín, Bohemia, spp. of *Aristocystis* and *Craterina*; ZELIZKO (366) p. 90.
- Jewe beds in Miocene drift, Sylt Id., *Cheirocr.*, *Echinospaera*; STOLLEY (321) p. 31.
- Grès à *Calymene tristani*, Anse de Vauville, Manche, *Ascoocrinus*; BIGOT (35).
- Trenton and Hudson R. periods in Minnesota, list of spp. of *Dendrocr.*, *Merocr.*, *Palaeocr.*, *Glyptocr.*, *Porocr.*, *Carabocr.*, *Cremacr.*, *Pleurocystis*, *Eurycystis*, *Glyptocystis*, *Palaeaster*, *Edrioaster*, *Agelacr.*, *Lichenocr.*, *Cyclocystoides*; WINCHELL & ULRICH (357) p. cxxiii.—Trenton Limestone of Silliman's Fossil Mt., Baffin Land, *Lichenocr.* and n. sp. of *Porocr.*; SCHUCHERT (302) p. 155.
- Black R. group, Rockton, Ill., Wisconsin, and Kentucky, *Agelacr. marginatus*; WINCHELL & ULRICH (357) pp. xcv, xcvi.
- Lower Ordovician, Calciferous of Fort Hunter, N.Y., *Crin.* or *Cyst.* stem and plates; CLELAND (69) p. 19, pl. xvi.
- k. Cambrian**:—Middle,—of Jinec, Bohemia, *Lichenoides*, *Mitrocystis*, *Lapillocystis*; ZELIZKO (365).

## IV. SYSTEMATIC†.

## (A.)—ECHINODERMA IN GENERAL

General systematic account; ECKSTEIN (102) pp. 221-227.

Echinodermes classified as: Class, Anangiens, with Orders, Ophiurides, Asterides; Class, Angiophores, with Orders, Crinoïdes, Echinidea, Holothurides; ACLOQUE (1).—Revised diagnosis of *Echinoderma*, and discussion of the division into Classes: *Cyst.*, *Blast.*, *Crin.* and *Edrioasteroidea*, which are *Pelmatozoa*, also *Hol.*, *Ech.*, and *Stelleroidea*, which are *Eleutherozoa*; BATHER (19) pp. 32-35.—*Echinoderma*

† A dagger prefixed to the trivial name of a species indicates that it is fossil; prefixed to the name of the author, it denotes that the reference is to the species in a fossil state; prefixed to the name of a genus, it indicates that all species of the genus here recorded are fossil, and the † is therefore not repeated before each name. The abbreviations *l. c.* and *op. cit.* refer only to the place or work quoted immediately before.

A name and reference quoted without further statement [e.g. *Ankyroderma danielseni*; PERRIER (264)] indicate that the quoted author's statement refers merely to locality or some question of slight importance. Further information can usually be gleaned from the cross-references under TITLES.

divided into five Classes: Holothurides, Palmatozoaires, Echinides, Asterides, Ophiurides; CUÉNOT (74) p. 437.

*Asteroidea*, vide sub *Ophiuroidea*.

*Edrioasteroidea*, though maintained as an independent Class by BATHER (19) and elsewhere, are in this Record dealt with under Cystidea (IV, g).

*Eleutherozoa*, grade of *Echinoderma*, diagnosis, divided into Classes, *Holothuroidea*, *Stelleroidea*, *Echinoidea*; BATHER (19) p. 217.

*Ophiuroidea* cannot be united in a Class with *Asteroidea*, since the resemblance is strictly superficial, and they differ from them as much as from any other Class of Echinoderms; HAMANN (148) pp. 746, 748.—No essential difference from *Asteroidea*, with which therefore they are united as *Stelleroidea* (q.v.); GREGORY in BATHER (19).—Related to *Ech.* rather than to *Ast.*, because of similar *Pluteus*, and alleged direct development in *Oph.* as in *Ech.* [!]; APOSTOLIDÉS (17) p. 325.

*Palmatozoa*, diagnosis, relations of Classes, *Cyst.*, *Blast.*, *Crin.* and *Edrioasteroidea*; BATHER (19) p. 38.

*Stelleroidea*, Class of Echinoderma, with Sub-classes, *Asteroidea* and *Ophiuroidea*, discussion and diagnosis; GREGORY in BATHER (19) pp. 237–239.

*Thecoidea* Jaekel, vide *Edrioasteroidea*.

#### (B).—HOLOTHURIOIDEA.

*Holothurioidea* diagnosed and divided into Orders, *Actinopoda* and *Paractinopoda*, general account; GOODRICH in BATHER (19) pp. 218 et sqq.

*Acanthotrochus*; GOODRICH in BATHER (19) p. 234. *A. mirabilis*, geogr. and bathymetric distrib.; LUDWIG (209) p. 168.

† *Achistrum* [nonnunquam *Anchistrum*, sed melius *Ancistrum*] *nicholsoni*; PEACH (260) p. 223.

*Achlyonice*; GOODRICH in BATHER (19) p. 229.

*Actinocucumis*; GOODRICH in BATHER (19) p. 230.

*Actinopoda*, Order, diagnosed and divided into families, *Holothuriidae*, *Cucumariidae*, *Molpadiidae*, *Elpidiidae*, and *Pelagothuriidae*; GOODRICH in BATHER (19) p. 227.

*Actinopyga miliaris*; ANDREWS (13) p. 117.

*Anapta*; GOODRICH in BATHER (19) p. 234.

*Ancistrum*, vide *Achistrum*.

*Ankyroderma*; GOODRICH in BATHER (19) p. 233, fig. i. *A. danielsseni*; PERRIER (264) p. 119. *A. jeffreysi*; LUDWIG in DOERDLEIN (93) p. 229: habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 162. *A. maroccanum* [sic], n. sp. off Morocco; *A. loricatum*, n. sp. coasts of Spain: PERRIER (264) p. 119.

*Bathyplores*; GOODRICH in BATHER (19) p. 227. *B. fallax* (p. 138); *B. natans*, known certainly only from W. coast Norway, habitat (p. 137); *B. tizardi* (p. 138): geogr. and bathymetric distrib. of each: LUDWIG (209).

*Benthodites*, *ert.* pro *Benthodytes* (q.v.); PERRIER (264).

*Benthodytes*; GOODRICH in BATHER (19) p. 229. *B. glutinosa*; PERRIER (264) p. 119. *B. janthina*; RICHARD (282) p. 81, fig. 31. *B. lingua*; PERRIER (264) p. 119.

*Benthogone rosea*, descr. with *VAIT.* [NOV.] *cylindrica* and *4-lineata*; PERRIER (264) p. 117.

*Capheira*; GOODRICH in BATHER (19) p. 229.

*Caudina*; GOODRICH in BATHER (19) p. 223.

*Cheiridota* et *Cheirodota*, vide *Chiridota*.

*Chiridota*; GOODRICH in BATHER

- ACLOQUE (1) p. 466. *C. discolor*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 165. *C. dunedinensis*, vide *Trochoda*. *C. laevis*, habitat, geogr. and bathymetric distrib.; LUDWIG (2) p. 164. + *C. traquairi*; PEACH (260) p. 223.
- Cladodactyla*, individuals of this genus common in S. Patagonia; C. BAJAL (55) p. 411.
- Colochirus*; GOODRICH in BATHER (19) p. 230.
- Cucumaria*; GOODRICH in BATHER (19) p. 230, fig. iv: key to French spp.; ACLOQUE (1) p. 466: key to Belgian spp.; LAMEERE (188) p. 146. *C. calcigera*, habitat, geogr. and bathymetric distrib.; LUDWIG (2) p. 146. *C. elongata*; PERRIER (263) p. 300: habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 147. *C. frondosa*; NOGAARD (245) p. 8: HARTLAUB (153) pp. 185, 191: LUDWIG DOEDERLEIN (93) p. 229: habitat geogr. and bathymetric distrib. not in Pacific, unless it incl. *C. californica* and *C. miniata*; LUDWIG (209) p. 141. *C. glacialis*, brood-pouch with young, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 144. *C. hyndmire*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 145. *C. incurvata*, described; PERRIER (263) p. 300. *C. lactea* incl. *C. n. terensis*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 145. *C. minuta*; LUDWIG in DOEDERLEIN (93) p. 229: habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 141. *C. pentactes*; ALLEN TODD (7) p. 187: original drawings of dissections; GOODRICH BATHER (19) p. 231, fig. iv. *C. pusilla*, geogr. and bathymetric distrib.; LUDWIG (209) p. 148. *C. typica*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 149.
- Cucumariidae*, diagnosis and discussion; GOODRICH in BATHER (19) p. 230.
- Deima*; GOODRICH in BATHER (19) p. 229, fig. iii.
- Deimatinae*, diagnosis; GOODRICH in BATHER (19) p. 229.
- Echinocucumis*; GOODRICH in BATHER (19) p. 230.
- Elpidia*; GOODRICH in BATHER (19) p. 229, fig. iii. *E. glacialis*, habitat, geogr. and bathymetric distrib., probably does not incl. species from S. of Australia; LUDWIG (209) p. 140: incl. *Tutela echin* R. Perr., coasts of Morocco; PERRIER (264) p. 117.
- Elpidiidae*, diagnosis, divided into sub-fam. *Psychropotinae*, *Deimatinae*.
- Elpidiinae*, general discussion; GOODRICH in BATHER (19) p. 227.
- Elpidiinae*, diagnosis; GOODRICH in BATHER (19) p. 229.
- Enypniastes*; GOODRICH in BATHER (19) p. 229.
- Euphronides*; GOODRICH in BATHER (19) p. 229. *E. auriculata*, *E. tomani* (p. 118), *E. violacea* (p. 119); PERRIER (264).
- Eupyrghus*; GOODRICH in BATHER (19) p. 233. *E. scaber*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 160.
- Gastrothuria*, n. g. of *Holothuriinae* with genotype *G. limbata*, n. sp., locality given; PERRIER (263) p. 299.
- Haplodactyla*; GOODRICH in BATHER (19) p. 233. *H. sp.*; BEDFORD (19) p. 293.
- Holothuria*; GOODRICH in BATHER (19) p. 227: key to French spp.; ACLOQUE (1) p. 466. *H. farcimen*; PERRIER (263) p. 299. *H. foral*, original drawings; descr. as typical *Holothurian*; GOODRICH BATHER (19) p. 219, fig. i. *H. impatiens*, section of body-wall; cit. p. 223, fig. ii: excretion by gonads; RUSSO (293). *H. mumm*; PERRIER (263) p. 299. *H. nigra*, endoskeleton; STEWART (3) p. 222. *H. poli*, excretion by gonads; RUSSO (293). *H. tubulosa*, original drawing of dissection; GOODRICH in BATHER (19) p. 222, fig. muscles; STEWART (318) p. 90: excretion by gonads; RUSSO (293).
- Holothuriidae*, diagnosis, divided into sub-fam. *Synallactinae*, *Holothuriinae*; GOODRICH in BATHER (19) p. 227.

- Holothuriinae*, diagnosis; GOODRICH in BATHER (19) p. 227.  
*Hypsilothuria*; PERRIER (262) p. 275, fig. 206. *H. attenuata* distinguished from *Sphaerothuria bitentaculata* Ludw. and *H. talismani*, descr.; PERRIER (264) p. 116.  
*Ilyodaemon*; GOODRICH in BATHER (19) p. 229, fig. iii.  
*Irpa*; GOODRICH in BATHER (19) p. 229. *I. abyssicola*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 141.  
*Kolga*; GOODRICH in BATHER (19) p. 229. *K. hyalina* and *K. nana*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 140.  
*Labidocemas*; GOODRICH in BATHER (19) p. 227.  
*Laetmogone*; GOODRICH in BATHER (19) p. 229. *L. violacea*, incl. *L. spongiosa* Theel, *L. brongnarti* E. Perr., and *L. jourdaini* Petit; PERRIER (264) p. 116.  
*Leptosynapta girardi*, breeding-period; WILSON (355) p. 351.  
*Meseres*; GOODRICH in BATHER (19) p. 227.  
*Mesothuria*; loc. cit. *M. intestinalis* incl. *Holothuria verrilli*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 138.  
*Molpadia*; GOODRICH in BATHER (19) p. 233.  
*Molpadiidae*, diagnosis and discussion; GOODRICH in BATHER (19) p. 232.  
*Muelleria*; GOODRICH in BATHER (19) p. 227. *M. agassizi*, parasitic copepods; EDWARDS (103).  
*Myriotrochus*; GOODRICH in BATHER (19) p. 234. *M. rinki*; KNIPOVICH (175) pp. 452, 458: habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 168.  
*Ocnus compressus*, n. sp. 627 metres, no locality given; PERRIER (263) p. 301.  
*Oneirophanta*; GOODRICH in BATHER (19) p. 229. *O. alternata*, n. sp. no locality given, but=*O. mutabilis* E. Perrier, Explor. sous-marines, fig. 201; PERRIER (264) p. 117.  
*Orcula*; GOODRICH in BATHER (19) p. 230. *O. barthii*, geogr. and bathymetric distrib. (vide etiam *Phyllophorus drummondii*) and *O. luminosa*, probably syn. of *O. barthii*, spicules having been destroyed in specimens of that sp.; LUDWIG (209) p. 152.  
*Orphnurgus*; GOODRICH in BATHER (19) p. 229.  
*Paelopatides*; GOODRICH in BATHER (19) p. 227.  
*Pannychia*; GOODRICH in BATHER (19) p. 229.  
*Paractinopoda*, Order, diagnosis, incl. only fam. *Synaptidae*; GOODRICH in BATHER (19) p. 234.  
*Parelpidia*; GOODRICH in BATHER (19) p. 229.  
*Pelagothuria*, *P. natatrix*, position discussed; GOODRICH in BATHER (19) p. 230, fig. iii. *P. ludwigi*, n. sp., Indian Ocean, general description, and three sketches from life; CHUN (63) p. 511.  
*Pelagothuriidae*, diagnosis, GOODRICH in BATHER (19) p. 230.  
*Peniagone*; op. cit. p. 229, fig. iii. *P. porcellus*, n. sp., 4060 metres, *P. verrillum*, n. sp., no localities given; PERRIER (264) p. 118.  
*Pentactella laevigata*, Kerguelen; CHUN (63) p. 252.  
*Periamma roseum*; PERRIER (264) p. 118.  
*Phyllophorus*; GOODRICH in BATHER (19) p. 230. *P. drummondii*, geogr. and bathymetric distrib., habitat, specimen with abnormal tentacles, approaching *Orcula barthii* which perhaps is syn. of this sp.; LUDWIG (209) p. 155. *P. pellucidus*, habitat, geogr. and bathymetric distrib., variation in number of tentacles; LUDWIG (209) p. 153.  
*Prophymosoma*, nom. nov. pro "*Phymosoma* Ship[ley, récemment proposé pour des Holothuries," non Haime; LAMBERT (187) p. 54. [*Phymosoma* is not Shipley, but Quatrefages, not a Holothurian but a Genyhyrean; the name *Physcosoma* is already proposed  
xx, p. 460, 1897), but objected to in  
1898) because *Physicosoma* was

in error for *Physcosoma*. But since Selenka gave *φύσων* as the derivation of his name, it should have been spelled *Physconosoma*, a form not liable to confusion with any name derivable from *φύσκη*. *Prophymosoma* is therefore a syn. of *Physconosoma*.]

*Pseudocucumis*; GOODRICH in BATHER (19) p. 230.

*Pseudostichopus*; GOODRICH in BATHER (19) p. 227.

*Psolidium*; GOODRICH in BATHER (19) p. 230.

*Psolus*; GOODRICH in BATHER (19) p. 230, fig. iv: key to French spp.; ACLOQUE (1) p. 466. *P. fabricii*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 156. *P. nummularis*, n. sp. 1050 metres, no locality given; PERRIER (263) p. 301. *P. operculatus*, N. of Spitzbergen, 1000 metres, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 159. *P. phantapus*; KNIPOVICH (175) p. 458: habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 155. *P. squamatus*; PERRIER (262) p. 274, fig. 205: habitat, geogr. and bathymetric distrib., Theel's var. from W. Patagonia very doubtful; LUDWIG (209) p. 158.

*Psychropotes*; GOODRICH in BATHER (19) p. 229, fig. iii. *Psychropates* [sic] *buglossa*, incl. *P. grimaldii* Herouard; *P. fucata*: PERRIER (264) p. 119.

*Psychropotinae*, diagnosis; GOODRICH in BATHER (19) p. 228.

*Psychrotrepes*; GOODRICH in BATHER (19) p. 229.

*Rhopalodina*; GOODRICH in BATHER (19) p. 230, fig. iv.

*Scotoanassa*; GOODRICH in BATHER (19) p. 229.

*Sootodeima*; GOODRICH in BATHER (19) p. 229.

*Scotoplanes*; GOODRICH in BATHER (19) p. 229.

*Siphothuria incurvata*, vide sub *Cucumaria*.

*Sphaerothuria*; GOODRICH in BATHER (19) p. 230, fig. iv: vide etiam *Hypsirothuria*.

*Stichopus acanthomela* and *S. diaboli* are both syn. of *S. moebii*; CLARK (65). *S. diaboli*; VERRILL (342) p. 583. *S. regalis*; PERRIER (263) p. 300: copper; DUBOIS (99). *S. richardi*, new forms of spicules; PERRIER (263) p. 300. *S. sitchaensis*, geogr. and bathymetric distrib.; LUDWIG (209) p. 136. *S. tremulus*, parasitic gastropod; BONNEVIE (42): geogr. and bathymetric distrib., not known certainly N.E. of Finmark, unless "*Holothuria calcarea* Sars" of Jarzynsky from Murman coast be *H. ealcareia*, which is syn. of this sp. (p. 136), to this is referred as var. *S. griegi* Oestergr. (p. 137); LUDWIG (209). *S. xanthomela*; VERRILL (342) p. 584.

*Synallactes*; GOODRICH in BATHER (19) p. 227.

*Synallactinae*, diagnosis; GOODRICH in BATHER (19) p. 227.

*Synapta* (GOODRICH, p. 234, fig. v), larval stages (p. 5, figg. iii, v, xvii); BATHER (19): key to French spp.; ACLOQUE (1) p. 465. *S. sp. indet.*; LUDWIG: spicules destroyed by formalin; HARTLAUB: in DOEDERLEIN (93) p. 230. *S. abyssicola*; PERRIER (264) p. 119. *S. digitata*, original drawings of dissections; GOODRICH in BATHER (19) p. 233, fig. v. *S. inhaerens*; ALLEN & TODD (7) p. 187: habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 162. *S. lappa*; CONANT (71). †*S. oligocaenica*, n. sp., Upper Oligocene of Offenbach am Main, spicules contrasted with Mediterranean spp., *S. digitata*, *S. inhaerens*, *S. hispida* and compared with *S. kefersteini* and *S. albicans*; SPANDEL (313). *S. viridis*, Bermuda, habitat, colour; VERRILL (342) p. 587.

*Synaptidae*, diagnosis and discussion; GOODRICH in BATHER (19) p. 234: alleged fossil representatives either sponge-spicules, or some other *Hol.* family; †SPANDEL (313).

*Theelia*; GOODRICH in BATHER (19) p. 230, fig. iv.

*Thyone*; GOODRICH in BATHER (19) p. 230, fig. iv: key to French spp.; ACLOQUE (1) p. 466. *T. fusus*; PERRIER (263) p. 301: habitat, geogr.

- and bathymetric distrib.; LUDWIG (209) p. 150. *T. gadeana*, n. sp. 106 metres, no locality given; PERRIER (263) p. 301. *T. raphanus*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 151.
- Trochoderma*; GOODRICH in BATHER (19) p. 234. *T. elegans*, habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 165.
- Trochodota*; GOODRICH in BATHER (19) p. 234. *T. dunedinensis*, spicules and locomotion; HORST (162).
- Trochostoma*; GOODRICH in BATHER (19) p. 233. *T. albicans* and *T. blakei*; PERRIER (264) p. 119. *T. boreale*; HARTLAUB (153) pp. 177, 190; KNIPOVICH (175) p. 458; LUDWIG in DOEDERLEIN (93) p. 230: habitat, geogr. and bathymetric distrib.; LUDWIG (209) p. 161.
- Tutela echinata*, vide *Elpidia glacialis*.

## (C).—ECHINOIDEA.

General discussion of the Classification of *Ech.*, such main divisions as *Palechinoidea* and *Euchinoidea* (or Nearechinides), as *Regularia* and *Irregularia*, and as Haeckel's based on external form of ambulacra (*Anthosticha* etc.), are rejected in favour of one based on presence or absence of jaws, viz. *Gnathostomata* and *Atelostomata*; the former further divided into *Plagiocysta*, *Endocysta*, and *Exocysta*, and *Endocysta* again into *Holostomata* and *Glyphostomata*, which names, latinised from Pomel, are preferred to Ludwig's *Abranchiata* and *Branchiata*, or Bell's *Endo-* and *Ecto-branchiata*; the sub-orders are in the main those of Zittel & Duncan, the classification of F. Bernard according to number of interambulacral columns (*Mono-*, *Poly-*, *Tetraplacida* etc.) being rejected; LAMBERT (187) pp. 4, 52 et sqq. General discussion of the Classification, rejection of *Palechinoidea* and *Euechinoidea*, and division into Sub-Class I. *Regularia Endo-branchiata*, with Orders, *Bothriocidaroida*, *Cystocidaroida*, *Cidaroida*, *Melonitoida*, *Pleniocidaroida*; II. *Regularia Ecto-branchiata*, with Order, *Diademoida*; III. *Irregularia*, with Orders, *Gnathostomata*, *Atelostomata*; GREGORY in BATHER (19) pp. 299–324: for sub-orders, families, etc., see alphabetical index.

Systematic value of intimate structure of spines; HESSE (159) p. 204.

*Abatus*; GREGORY in BATHER (19) p. 322.

*Abranchiata*, rejected (see general paragraph, supra); LAMBERT (187) p. 52.

*Acanthechinus*; GREGORY in BATHER (19) p. 309.

*Aceste*; GREGORY in BATHER (19) p. 322.

†*Acrocidaris*; GREGORY in BATHER (19) p. 307. *A. formosa*; HUENE (166) p. 356. *A. nobilis*, microstructure of spine; HESSE (159) p. 219. *A. striata*; BENOIST (31) p. 3.

*Acrocladinae* Lamb., sub-tribe of *Polyporinae*; LAMBERT (187) p. 55.

†*Acrosalenia*; GREGORY in BATHER (19) p. 306: distinguished fr. *Eodiadema* (p. 35), place in phylogeny (p. 49); LAMBERT (187). *A. decorata*; BENOIST (31) p. 3. *A. hemiciidaroides*, microstructure of spine; HESSE (159) p. 218. *A. lamarki*; BENOIST (31) p. 4. *A. pustulata*, microstructure of spine; HESSE (159) p. 218. *A. spinosa*, genotype, differences from more ancient species; LAMBERT (187) p. 36. *A. wiltoni*, microstructure of spine; HESSE (159) p. 218.

*Acrosalenidae*, diagnosis; GREGORY in BATHER (19) p. 306.

†*Actinophyma*; GREGORY in BATHER (19) p. 310.

†*Adelopneustes*; GREGORY in BATHER (19) p. 316.

*Adetinae*, section of *Spatangidae*; GREGORY in BATHER (19) p. 321.

†*Adelopneustes*; GREGORY in BATHER (19) p. 312.

*Aerope*; GREGORY in BATHER (19) p. 322.

- Agassizia*; GREGORY in BATHER (19) p. 322, fig. xxxix.  
*Alexandria*, discussed; GREGORY in BATHER (19) p. 318.  
*Amblypneustes*; GREGORY in BATHER (19) p. 313. *A. pallidus*, microstructure of spine; HESSE (159) pp. 239, 243.  
 †*Amblypygus*; GREGORY in BATHER (19) p. 320.  
*Amphidetus* vide *Echinocardium*.  
*Amphipneustes lorioli* n. g. et sp. allied to *Palaeopneustes*, 'Belgica' expedition; KOEHLER (180) p. 817.  
 †*Ananchytes* seu *Ananchites*, vide *Echinocorys*.  
 †*Anaulocidaris*; GREGORY in BATHER (19) p. 314: a Mesozoic Perischoechinoid?; LAMBERT (187) p. 39.  
*Anochanus*; GREGORY in BATHER (19) p. 320.  
*Anomalanthus*; GREGORY in BATHER (19) p. 318.  
 †*Anorthopygus*; GREGORY in BATHER (19) p. 320. *A. michelini*; CHOFFAT (61) & (62) pp. 159, 193, is a limestone form, p. 199. *A. orbicularis*; CHOFFAT (61) & (62) pp. 159, 163, 172, 193, is a marl form, p. 199.  
*Anthosticha* and congruous terms of Haeckel criticised (see general paragraph, supra); LAMBERT (187) p. 52.  
*Arachninae* subfam. of *Scutellidae*; LAMBERT (187) p. 55.  
*Arachniopleurus*, incl. *Radiocyphus*; GREGORY in BATHER (19) p. 312.  
*Arachnoides*, discussed; GREGORY in BATHER (19) p. 318: key to French spp.; ACLOQUE (1) p. 464. *A. placenta*; BEDFORD (25) p. 285.  
*Arachnoidinae*, diagnosis; GREGORY in BATHER (19) p. 318.  
*Arbacia*; op. cit. p. 308, fig. xxi. *A. sp.*; LOEB (199), MATHEWS (226), MORGAN (235), VERNON (337), see II, F, viii. *A. sp.* "the black sea-urchin" of Eastern U. S., original photograph; DAVENPORT (80) fig. 186. *A. alternans*, literature (p. 7), *A. dufresnei*, confusion with *A. alternans*, measurements, colour in life, and number of anal plates in 10 examples, distribution (p. 5); MEISSNER (229). *A. nigra*, microstructure of spine; HESSE (159) pp. 238, 244, pl. xii. *A. punctulata*, breeding period; WILSON (355) p. 351: microstructure of spine; HESSE (159) pp. 238, 244. *A. pustulosa*, see II, F, viii; VERNON (337), VIGUIER (343), WINKLER (358): microstructure of spine; HESSE (159) pp. 238, 244. *A. spatuligera* ditto; locc. citt.  
*Arbaciadinae*, n. subfam. of *Echinometridae*, this form preferred to *Arbaciinae* because there exists a genus *Arbacinu* [why not *Arbaciinae*?]; LAMBERT (187) p. 54.  
*Arbaciidae*, diagnosis; GREGORY in BATHER (19) p. 307.  
*Arbacia*, Subord. nov. of *Diademoida*, diagnosis, divided into Fam. *Hemicidaridae*, *Arbaciidae*; GREGORY in BATHER (19) p. 307: name liable to confusion with Pomel's genus *Arbacia*; LAMBERT in Review.  
 †*Arbacia monilis*, or *Psammechinus monilis* Vinassa; AIRAGHI (4) p. 70: not *A. monilis* Desmarest; LAMBERT in Review.  
 †*Archaeocidaridae*, diagnosis; GREGORY in BATHER (19) p. 301.  
 †*Archaeocidaris*; GREGORY in BATHER (19) p. 302, fig. xvi: either a syn. of *Echinocr.* (q. v.), or may be restr. to spp. with smooth scrobicules, e.g. *A. biangulata*, *A. megastylus*, *A. norwoodi*, *A. rossica*, *A. travutscholdi*, and *A. wortheni* Hall (as genotype), in which sense it precedes *Cidarotropus* Pomel [but cannot be accepted since it excludes the undoubted genotype *Cidaris urei*]; LAMBERT (187) p. 42. *A. sp.*; PEACH (260) p. 223. *A. sp.*; PROSSER (272) pp. 5, 6, 7, 153, 157. *A. agassizi*, Upper Coal Measures, Topeka, spines and plates only (p. 48, pl. viii); *A. megastylus*, spines (p. 49, pl. viii): BEEDE (29). *A. munsteri* vide sub *Eocidaris*. *A. rossica*; LAMBERT (187) p. 38: microstructure of spine; HESSE (159) p. 213. *A. trudifer*, Topeka limest.; BEEDE (29) p. 47, pl. viii. *A. urei*; PEACH (259) p. 65, and (260) p. 223. *A. verneuili* vide sub *Permocidaris*.

- †*Archaeodiadema* Greg.; GREGORY in BATHER (19) p. 308: syn. of *Hemipedina*; LAMBERT (187) p. 30.
- †*Archaeopneustes*; GREGORY in BATHER (19) p. 321.
- †*Archinacia*; loc. cit. *A. delgadoi*; CHOFFAT (62) pp. 155, 159, 163, 193.
- Argopatagus*; GREGORY in BATHER (19) p. 323.
- Aspidodiadema* referred to *Orthopsidae*; GREGORY in BATHER (19) p. 308, fig. xxii; this astonishes LAMBERT in Review.
- Asternata*, Subord. of *Atelostomata*, diagnosis, divided into Famm. *Echino-neidae*, *Nucleolitidae*, and *Cassidulidae*; GREGORY in BATHER (19) p. 320.
- †*Asterocidaris* Cott., maintained as subgenus of *Gymnocidaris*, with genotype *A. nodoti*, comprises also *Hemicidaris granulosa* Wr. and *Pseudocidaris peroni* Cott.; LAMBERT (186) p. 483. *A. granulosa*; BENOIST (31) p. 4: variation in ornament of apex, structure of ambulacrals, specimens from l'Indre form a var. nov. *benoisti*; certain specimens figd. in Echinol. Helvet. and by Duncan are not this sp.; LAMBERT (186) p. 484, pl. viii. *A. minor*; BENOIST (31) p. 3: is a *Gymnocidaris*; LAMBERT (186) p. 483.
- †*Asteropsis*; GREGORY in BATHER (19) p. 309.
- †*Asterostoma*; GREGORY in BATHER (19) p. 321.
- Asthenosoma*; GREGORY in BATHER (19) p. 311, figg. x, xxix, xxx. *A. sp.*; CHUN (63) p. 495. *A. heteractis* n. sp., 5 fms. near Singapore, loops of gut, section of radius showing a deeper nerve system; BEDFORD (25) p. 278, pl. xxi. *A. hystrix*, muscles; STEWART (318) p. 89.
- Astrivlypeus*; GREGORY in BATHER (19) p. 317.
- Astropygæ*; GREGORY in BATHER (19) p. 310.
- Atelostomata*, Order, diagnosis, discussion, divided into Sub-orders *Asternata* and *Sternata*; GREGORY in BATHER (19) p. 318.
- †*Australanthus*; GREGORY in BATHER (19) p. 321.
- †*Baueria* placed in *Salenidae*; GREGORY in BATHER (19) p. 306: surprising action; LAMBERT in Review.
- Boletia*; GREGORY in BATHER (19) p. 313.
- †*Bothriocidaris*, descr.: *B. pahlani*; GREGORY in BATHER (19) p. 300, fig. xiv [adapted from Schmidt, here and in the description is a confusion of tubercles with pores, see PYCRAFT in Review].
- †*Bothriocidaroida*, Order, diagnosis, no family mentioned; loc. cit.
- †*Bothriolampas abundans*; FOURTAU (116) p. 481.
- †*Bothriopygus*; GREGORY in BATHER (19) p. 320.
- Branchiata*, rejected (see general paragraph, supra); LAMBERT (187) p. 52.
- †*Breynella*; GREGORY in BATHER (19) p. 321.
- Breynia*; GREGORY in BATHER (19) p. 323. †*B. vicentina*; OPPENHEIM (251) p. 114.
- †*Brissomorpha fuchsii*, microstructure of spine; HESSE (159) p. 260, text-fig.
- †*Brissopatagus*; GREGORY in BATHER (19) p. 323.
- Brissopsis*; GREGORY in BATHER (19) p. 322, fig. xlii: discussed; SCHLUETER (299) p. 361: key to French spp.; ACLOQUE (1) p. 464. †*B. brevistella* and †*B. cretacea*, vide sub *Diplodetus*. †*B. lamberti*, n. sp., Mid. Eocene, Ghizeh, type in coll. Lambert; GAUTHIER in FOURTAU (115) p. 42, pl. iii. *B. lyrifera*; CHUN (63) p. 158: †AIRAGHI (4) p. 72. †*B. minor*, vide sub *Plesiaster*. †*B. ottnangensis*; MARIANI (224).
- Brissus*; GREGORY in BATHER (19) p. 323. *B. sp.* Diego Garcia; CHUN (63) p. 415. †*B. sp.* microstructure of spine; HESSE (159) p. 259. *B. carinatus* Gm. (= *latecarinatus* Leske) incl. *B. unicolor* AL. Ag. non Klein, distrib., measurements; BEDFORD (25) p. 287: ANDAMAN Is.; ANDERSON (11) p. 13: microstructure of spine; HESSE (159) p. 259. †*B. oblongus*; AIRAGHI (4) p. 73.



- Calycina*, Subord. of *Diademoida*, diagnosis, divided into Fam. *Saleniidae* *Acrosaleniidae*; GREGORY in BATHER (19) p. 306.
- Calymne*; GREGORY in BATHER (19) p. 321.
- +*Caratomus*; GREGORY in BATHER (19) p. 320. *C. faba* et var. *trigonus pygus*; KILIAN & LORY (170) p. 61.
- +*Cardiaster*; GREGORY in BATHER (19) p. 321. *C. sp.* nondescr.; DIBLI (92) p. 494. *C. ananchytis*; BRYDNE (51) p. 12: incl. *Spatang granulosus* Hag.; DEECKE (82) pp. 55, 71: as zonal fossil; ROWE (288) p. 313. *C. cf. arnaldi*; SCHLUETER (297) p. 419. *C. concav* Catullo sp., redescr. and distinguished fr. *C. maximus*; SCHLUETER (299) p. 375. *C. granulosus*; CHOFFAT (62) pp. 172, 193. *C. heber* vide *C. maximus*. *C. maximus* redescr. fr. Meudon Chalk, in *Stegaster facki* and *C. lehmanni* of Stolley as crushed examples, al *C. heberti* Cott. nom. nud., which last incl. *Holaster cordiform* Sorign. non Woodward; SCHLUETER (298) p. 373, pls. xvii, xvi *C. perezii* Wright (Brit. Cret. Ech. pl. lxviii, fig. 2) perhaps not sal as *Holaster perezii* Sism.; LORIOL (207) p. 60. *C. pilula*, vide s *Offaster*. *C. seu Scagliaster pseudoitalicus*, redescr., compared wi *C. italicus* [vide sub *Stegaster*]; SIMIONESCU (306) p. 37, pl. iii. *pygmaeus*, as zonal fossil; ROWE (288) pp. 318, 319.
- +*Cardiolampas (Dysaster) ovulum*; KILIAN & LORY (170) pp. 15, 50, 52.
- Cassidulidae*, diagnosis, divided into Subfam. *Clypeinae*, *Cassidulina* *Catopyginae*, *Echinolampinae*, and *Eolampinae*; GREGORY in BATH (19) p. 321.
- Cassidulinae*; loc. cit.
- +*Cassidulus*; loc. cit. *C. florealis*; CLARK (66) p. 335. *C. lusitanicu* CHOFFAT (62) pp. 172, 193. *C. romani*, n. sp., Lower Eocene, Geb Haridi, Egypt, type in Mus. Hist. Nat. Paris; GAUTHIER in FOURTA (115) p. 34, pl. ii. *C. subquadratus*; HOLMES (160) p. 129.
- Catopyginae*; GREGORY in BATHER (19) p. 321.
- +*Catopygus*; loc. cit. and fig. xvi. *C. albensis*, compared with *C. carinatus* PETRACZEK (265) p. 35. *C. cylindricus*; KILIAN & LORY (170) p. 61. *C. pusillus*; CLARK (66) p. 335. *C. rouvillei*, n. sp., Vraconnian des Uzès, type in coll. F. Leenhardt at Montauban; LORIOL (207) p. 64 pl. vi.
- Centrostephanus*; GREGORY in BATHER (19) p. 309. *C. rodgersi*, micro structure of spine; HESSE (159) p. 249, text-fig. iv.
- Chondrocidaris*; GREGORY in BATHER (19) p. 302.
- Cidaridae*, diagnosis; loc. cit.: divided into 4 Sub-fam. *Streptocidarinae* *Stereocidarinae*, *Tetracidarinae*, *Orthocidarinae*; LAMBERT (187) p. 53
- Cidaris* descr.; GREGORY in BATHER (19) p. 302, figg. xiii, xvi, xvii. +*C. sp.*; KILIAN & LORY (170) p. 60. +*C. sp.*; STILLE (319) p. 13. +*C. sp. indet.*; SCHLUETER (297) p. 420. +*C.*, n. f., spine; BETTONI (34) p. 10. +*C. admeto* Münt., syn. of *Eodiadema regularis*; LAMBERT (187) p. 32. +*C. admeto* Quenst., partim *Mesodiadema* (q.v.), partim *Cidaris* aff. *liagora*; LAMBERT (187) p. 32. +*C. alata*; BROILI (48) p. 369; O. GORDON (132) p. 339, and (249) p. 309; ZITTEL (368) p. 349: microstructure of spine; HESSE (159) p. 230. +*C. amalthae* vide *Miocidaris*. +*C. angulata*, microstructure of spine; HESSE (159) p. 219. +*C. antarctica*, n. sp., Lower Miocene, S. Patagonia, spine and plates from various loc.; ORTMANN (255) p. 369. +*C. aspera* microstructure of spine; HESSE (159) p. 215. +*C. avenionensis* DEPÉRET (89) p. 402; DOUXAMI (95) p. 420: microstructure of spine HESSE (159) p. 223. +*C. bathonica*; BENOIST (31) p. 3. +*C. baugeyi* GROSSOUVRE (145) p. 59. +*C. biformis*, microstructure of spine HESSE (159) p. 227. +*C. blumenbachi*; HUENE (166) pp. 352, 353 362: microstructure of spine; HESSE (159) p. 215. +*C. bradfordensis* ditto; loc. cit. +*C. brauni*; BROILI (48) p. 369; O. GORDON (132) p. 346

and (249) p. 309: KOSSMAT (184) p. 90: (incl. *C. catenifera* and *C. waechteri*), microstructure of spine; HESSE (159) p. 229. +*C. buchi*; BROILI (48) p. 369: ZITTEL (368) p. 350: microstructure of spine; HESSE (159) p. 230. +*C. [o]aevus* Quenst. referred to *Permocidaris*; LAMBERT (187) p. 39. *C. canaliculata*, is a *Dorocidaris* not a *Goniocidaris*, measurements of 13 examples, colour in life, distrib.; MEISSNER (229) p. 3. +*C. caryophyllia*; DEL BUE (87) p. 122. +*C. cenomanensis*; CHOFFAT (62) pp. 155, 192. +*C. cervicalis*; HUENE (166) p. 351: microstructure of spine; HESSE (159) p. 215. +*C. cervicornis*; OPPENHEIM (251) p. 82. +*C. clavigera*; DIBLEY (92) p. 493: DEECKE (82) p. 71: STRAHAN (322): as zonal fossil; ROWE (288) pp. 304, 326: microstructure of spine; HESSE (159) p. 219. +*C. clunifera*, ditto (p. 234), +*C. conoidea*, ditto (p. 233); HESSE (159). +*C. cornifera*; KILIAN & LORY (170) pp. 53, 56. +*C. coronata*, microstructure of spine; HESSE (159) p. 216. +*C. courtaudiana*; TOBLER (328) p. 291. +*C. criniferus* vide sub *Mesodiadema*. +*C. cydonifera*; KILIAN & LORY (170) p. 52. +*C. decorata*; BROILI (48) p. 369: O. GORDON (132) p. 340, and (249) p. 309: microstructure of spine; HESSE (159) p. 227. +*C. desori* Cott. 1857, referred to *Plegiocidaris sener* (q.v.); LAMBERT (187) p. 48. +*C. dissimilis*, microstructure of spine; HESSE (159) p. 219. +*C. domarensis*; BETTONI (34) p. 10. +*C. dorsata*; BROILI (48) p. 369: O. GORDON (132) p. 339, and (249) p. 309: KOSSMAT (184) p. 90: spines; SOEHLE (311) p. 2: microstructure of spine; HESSE (159) p. 230. +*C. edwardsi* and +*C. elegans*, ditto; HESSE (159) p. 216. +*C. erbaensis*, Mte Domaro; BETTONI (34) p. 9, pl. i. +*C. farringtonensis*, microstructure of spine (p. 235), +*C. faujasi*, ditto (p. 219); HESSE (159). +*C. figueirensis*; CHOFFAT (62) pp. 163, 172, 192. +*C. filograna*, microstructure of spine; HESSE (159) p. 216. +*C. aff. filograna*; HUENE (166) p. 352. +*C. "Cydaris [sic] filigranoides* (Mgh.) forma inedita, descritta in un autografo del Meneghini che io conservo," Sinemurian, Central Apennines; MORENA (233) p. 186. +*C. flexuosa*; O. GORDON (132) p. 340, and (249) p. 309: (incl. *C. brandis*, *C. mayeri*, *C. cingulata*), microstructure of spine; HESSE (159) p. 231, text-fig. +*C. florigemma*; HUENE (166) pp. 355, 356, 362, 364, 365: KOBAYASHI (177) p. 209: STILLE (319) p. 17: microstructure of spine; HESSE (159) p. 216. +*C. fustis*; BROILI (48) p. 369: microstructure of spine; HESSE (159) p. 231. +*C. gingensis*; STRUEBIN (324) pp. 335, 337. +*C. glandifera*; KILIAN & LORY (170) pp. 15, 33: POPOVICI-HATZEG (269) p. 550: microstructure of spine; HESSE (159). +*C. grandaeva*, microstructure of spine; HESSE (159) p. 214: vide etiam sub *Eotiaris*. +*C. grossularites*, microstructure of spine; HESSE (159) p. 234. +*C. guerangeri*; BENOIST (31) p. 3. +*C. guaiensis*; CHOFFAT (62) p. 184. +*C. hagenowi* and +*C. hardouini*, microstructure of spine; HESSE (159) p. 220. +*C. haussmanni*; BROILI (48) p. 369: O. GORDON (132) p. 340, and (249) p. 309: microstructure of spine; HESSE (159) p. 228, text-fig. +*C. heteracantha*, KILIAN & LORY (170) pp. 56, 57. +*C. hirudo*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) pp. 304, 318, 324: microstructure of spine; HESSE (159) p. 220. +*C. ilminsterensis*, vide sub *Plegiocidaris*. +*C. impressa*, n. sp., Toarcian (couches à *Leptaena*) May, Calvados; LAMBERT (187) p. 47, pl. i. +*C. interlineata*; OPPENHEIM (251) p. 81: microstructure of spine; HESSE (159) p. 223. +*C. itys*, discussed and retained in the genus; LAMBERT (187) p. 40, pl. i. +*C. cf. jullieni*; BLAYAC (39). +*C. junqueiroensis*; CHOFFAT (62) p. 185. +*C. koyserlingi*, vide *Eotiaris*. +*C. klipsteini*; BROILI (48) p. 369. +*C. koecklini*; TOBLER (328) p. 301. +*C. aff. lardyi*; CHOFFAT (62) p. 228. +*C. leenhardtii*, n. sp., based on spines, A<sup>1</sup> in coll. F. Leenhardt at Montauban.

*pharydi*; KILIAN & LORY (170) p. 52. +*C. liagora*; O. GORDON (132) p. 340, and (249) p. 309: vide etiam *Triadocidaris*. +*C. lineolata*; KILIAN & LORY (170) p. 50. +*C. lingualis*, microstructure of spine; HESSE (159) p. 220. +*C. ludovici*, referred to *Polycidaris*; BETTONI (34) p. 11. +*C. malum* (p. 184), +*C. mamarozensis* (pp. 172, 192), +*C. maresi* (p. 184); CHOFFAT (62). +*C. marginata*; KILIAN & LORY (170) p. 33: microstructure of spine; HESSE (159) p. 217. +*C. martini*, vide sub *Plegiocidaris*. +*C. matheyi*; LORIOI (206) p. 182. +*C. meandrina*; BENOIST (31) pp. 3, 4: spine, now first found in N. France; LAMBERT (186) p. 475. +*C. meridanaensis*; KILIAN & LORY (170) p. 50. *C. metularia*; ANDERSON (11) p. 16: microstructure of spine; HESSE (159) p. 225. +*C. mexithoeisrensis*; CHOFFAT (62) p. 184. +*C. moorei*, vide sub *Plegiocidaris*. +*C. morierei*, at May, horizon discussed; LAMBERT (187) p. 48. +*C. muensteri*, microstructure of spine; HESSE (159) p. 224. +*C. muensteri* Meli 1880, non Sism., referred to *Dorocidaris papillata*; MELI (230) p. 332. +*C. multimammata*, microstructure of spine; HESSE (159) p. 225. +*C. muricata*; BAUMBERGER & MOULIN (23) p. 171: CHOFFAT (62) p. 184: KILIAN & LORY (170) pp. 50, 52: microstructure of spine; HESSE (159) p. 220. +*C. oligocena*, ditto; HESSE (159) p. 224. +*C. olifex*, vide sub *Mesodiadema*. +*C. oosteri*; OPPENHEIM (251) p. 81: microstructure of spine; HESSE (159) p. 224. +*C. oppeli*; LORIOI (206) p. 182. +*C. parastadifera*; O. GORDON (132) p. 339, and (249) p. 309. +*C. perornata*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) p. 304. +*C. cf. perornata*, microstructure of spine; HESSE (159) p. 220. +*C. pistillum*; DEECKE (82) p. 71: microstructure of spine; HESSE (159) p. 220. +*C. cf. pretiosa*; CHOFFAT (62) p. 184. +*C. propinqua*; HUENE (166) pp. 351, 359, 365: KILIAN & LORY (170) p. 15: microstructure of spine; HESSE (159) p. 217. +*C. pseudopistillum*, ditto; HESSE (159) p. 221. +*C. psilonoti*; ENGEL (106) p. 240: STILLE (319) p. 7. +*C. punctata*, microstructure of spine; HESSE (159) p. 235. +*C. punctatissima*; KILIAN & LORY (170) pp. 47, 52: POPOVICI-HATZEG (269) p. 550: microstructure of spine; HESSE (159) p. 221. +*C. pustulosa*; KILIAN & LORY (170) p. 52. +*C. pyrifera* [sic] (p. 234), and +*C. pyrenaica* (p. 221), microstructure of spine; HESSE (159). +*C. regularis* is not a *Hypodiadema*, however that genus be interpreted, but is an *Eodiadema*; LAMBERT (187) p. 34. +*C. reussi*; ZELIZKO (364) p. 175: microstructure of spine; HESSE (159) p. 221. +*C. rhyzacantha* [sic]; KILIAN & LORY (170) pp. 52, 53. +*C. roemeri*; BROILI (48) p. 369: (incl. *C. globifera* and *C. tyrolensis*), microstructure of spine; HESSE (159). +*C. rossica*, vide sub *Archaeocidaris*. +*C. rossii*, n. sp., Priabona beds of Castelli, E. of Possagno, type at Pavia University, compared with *C. sabarattensis*, *C. scampicci*, and *C. mezzoana*; OPPENHEIM (251) p. 82, pl. xvii. +*C. scepтрifera*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) p. 304: microstructure of spine; HESSE (159) p. 221. +*C. cf. scepтрifera*; SCHLUETER (297) p. 419. *C. scepтрum*; REIS (278) pp. 44, 84. +*C. schwabenau*; KORNHUBER (183) p. 87: microstructure of spine; HESSE (159) p. 224. +*C. scrobiculata*, ditto; HESSE (159) p. 231. +*C. semicostata*; BROILI (48) p. 369: (incl. *C. klipsteini* and *C. perplexa*), microstructure of spine; HESSE (159) p. 231. +*C. serrifera*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) pp. 309, 313. +*C. similis* (incl. *C. baculifera*) (p. 227), and +*C. sorigneti* (p. 222), microstructure of spine; HESSE (159). +*C. spinigera*; KILIAN & LORY (170) p. 52: OPPENHEIM (251) p. 80: microstructure of spine; HESSE (159) pp. 222, 224. +*C. spinosa*; LORIOI (206) p. 182: microstructure of spine; HESSE (159) p. 217. +*C. spinulosa*, descr.; GREPPIN (138) p. 186. +*C. splendens*; CLARK (66) p. 339. +*C. subcoronata*; BROILI (48)

- p. 369: ZITTEL (368) p. 349. +*C. submarginata*, microstructure of spine; HESSE (159) p. 217. +*C. subularis*; OPPENHEIM (251) p. 81. +*C. subvesiculosa*; DEECKE (82) pp. 43, 71, 90: SCHMIDT (301) p. cxcviii. *C. (Stereocidaris) subvesiculosa* d'Orb.; GREGORY in BATHER (19) p. 303, f. xvii, not d'Orbigny's sp., but probably *Stereocidaris cretosa* Mantell; LAMBERT in Review [this was Cotteau's opinion, but Schlueter 1892 said Cotteau was incorrect, nevertheless this not *C. subvesiculosa*]. +*C. cf. subvesiculosa*; DEECKE (82) p. 55: spine; PETRACZEK (265) p. 36: microstructure of spine; HESSE (159) p. 222. +*C. thomasi*, n. sp., Cenomanian, beds with *Neolobites vibrayeanus*, Beharieh oasis, Egypt, holotype in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 6, pl. i. *C. thourasii* [sic], microstructure of spine; HESSE (159) p. 226. *C. tiara*; ANDERSON (11) p. 7. *C. tribuloides*; CONANT (71): DUERDEN (100) p. 613, and (101) p. 620: +ALMERA (9) p. 760. +*C. trigona*; BROILI (48) p. 369: ZITTEL (368) p. 350: microstructure of spine; HESSE (159) p. 229. +*C. tuberculosa*, microstructure of spine; HESSE (159) p. 217. +*C. vesiculosa*; BRUNHUBER (50): CHOFFAT (62) pp. 185, 228: WISNIOWSKI (359) p. 240: microstructure of spine; HESSE (159) p. 222. *C. ?vesiculosa*; BRYDNE (51) p. 12. +*C. cf. vesiculosa*; BLANCKENHORN (38) p. 25: CHOFFAT (62) pp. 155, 192. +*C. walcotti*; CLARK (66) p. 339. +*C. weissmanni*; BROILI (48) p. 369: microstructure of spine; HESSE (159) p. 227. +*C. zschokkei*; TOBLER (328) p. 291.
- Cidaroida*, Order, diagnosis, divided into Famm. *Lepidocentridae*, *Archaeocidaridae*, *Cidaridae*, and *Diplocidaridae*; GREGORY in BATHER (19) p. 301.
- +*Cidaropsis*; GREGORY in BATHER (19) p. 307: distinguished from *Hemipedina*; LAMBERT (187) p. 28.
- +*Cidarotropus* Pomel, vide *Archaeocidaris*.
- Cionobrius*; GREGORY in BATHER (19) p. 323. *C. ?* sp. nondescr., Andaman Sea, 640 fms.; ANDERSON (11) p. 10.
- +*Circopeltis*; GREGORY in BATHER (19) p. 307. *C. neocomiensis*; CHOFFAT (62) p. 184.
- +*Claviaster*; GREGORY in BATHER (19) p. 321. *C. cornutus*; BLANCKENHORN (36) p. 38.
- +*Cleistechinus*; GREGORY in BATHER (19) p. 323.
- Climapedinae* [melius *Climacopedinae*] n. subfam. of *Pedininae*; LAMBERT (187) p. 54.
- +*Clypeanthus*; GREGORY in BATHER (19) p. 321.
- Clypeaster*; GREGORY in BATHER (19) p. 318, figg. v, xxvi. *C. sp.*; ANDERSON (11) pp. 6, 7. *C. sp.* original photogr.; DAVENPORT (80) fig. 188. +*C. sp.*; COPPA (72) p. 35. +*C. acuminatus*; LOERENTHEY (204) p. 59. +*C. aegyptiacus*; DEFÉRET (89) p. 403: vide etiam *C. altus*. +*C. altus*; ROTH v. TELEGD (286) p. 95: perh. incl. *C. aegyptiacus*, characteristic of Helvetian, list of locc., Pliocene specimens belong to *C. pliocenicus*; MELI (230) p. 337. +*C. breunigi*; OPPENHEIM (251) p. 92, pl. xv. +*C. cf. complanatus*; WOLFF (360). +*C. crasscostatus*; KORNHUBER (183) p. 87: LOERENTHEY (204) p. 61. +*C. duncanianus*, nom. nud. Miocene, Burma; NOETLING (244) p. 44. +*C. cf. gibbosus*; LOERENTHEY (204) p. 59. *C. humilis*, endoskeleton; STEWART (318): microstructure of spine; HESSE (159) p. 252. +*C. imperialis*, in GREGORY (112) Zool. Rec. 1899, "rappelle plutôt la forme de *C. olisiponensis* et *C. duchassingi*"; LAMBERT in Review. +*C. ithmicus*; FOURTAU (115) p. 59. +*C. melitensis*; KORNHUBER (183) p. 87. +*C. cf. parvus*; ROTH v. TELEGD (286) p. 95. +*C. pliocenicus* Seguenza, maintained and distinguished fr. *C. altus* Lam., list of locc.; MELI (230) p. 337. +*C. priacus*, n. <sup>Triabnum beds of Romano near Bassano, type in coll.</sup>

- (251) p. 92, pl. v: specimen too poor to found a species on, and probably not a *Clypeaster* at all; LAMBERT in Review. +*C. pyramidalis*; LOERENTHEY (204) p. 61. *C. rotundus*, endoskeleton; STEWART (318). +*C. scillae*; ALMERA (9) p. 760. *C. scutiformis*, microstructure of spine; HESSE (159) p. 251, pl. xiii. +*C. cf. subdepressus*; WOLFF (360).
- Clypeastridae*, diagnosis, divided into subfam. *Clypeastrinae* and *Arachnoidinae*; GREGORY in BATHER (19) p. 318.
- Clypeastrina*, Subord. of *Gnathostomata*, diagnosis, discussed and divided into Famm. *Fibulariidae*, *Laganidae*, *Scutellidae*, and *Clypeastridae*; GREGORY in BATHER (19) p. 316.
- Clypeastrinae*, diagnosis; GREGORY in BATHER (19) p. 318.
- Clypeastroida*, Suborder of *Exocysta*, comprises *Conoclypeidae*, *Proscutidae*, *Clypeasteridae* and *Scutellidae*; LAMBERT (187) p. 55.
- Clypeinae*; GREGORY in BATHER (19) p. 321.
- +*Clypeopygus*; loc. cit. *C. michelini*; KILIAN & LORY (170) p. 56.
- +*Clypeus*; GREGORY in BATHER (19) p. 321, fig. xi: place in phylogeny; LAMBERT (187) p. 48. *C. altus*; BENOIST (31) p. 3: MUEHLBERG (236) p. 315. *C. hugi*; MUEHLBERG (236) p. 320. *C. patella*; BENOIST (31) p. 6. *C. plati*; BENOIST (31) p. 3: MUEHLBERG (236) pp. 310, 313. *C. sinuatus*; TOBLER (328) p. 303: WISNIOWSKI (359) p. 232.
- +*Codechinus*; GREGORY in BATHER (19) p. 310. *C. rotundus*; KILIAN & LORY (170) p. 56.
- +*Codiopsis*; GREGORY in BATHER (19) p. 309. *C. lorini*; CHOFFAT (62) p. 184: var. *alpina*; KILIAN & LORY (170) p. 56.
- Coelopleurus*; GREGORY in BATHER (19) p. 308. +*C. cf. delbosi*, compared with *C. equis (= coronalis)*; OPPENHEIM (251) p. 85. *C. maillardi*; ANDERSON (11) p. 5.
- +*Coenodiadema* A. Ag., syn. of *Hemipedinia*; LAMBERT (187) p. 30.
- +*Collyrites*; GREGORY in BATHER (19) p. 321: place in phylogeny; LAMBERT (187) p. 48. *C. analis*; BENOIST (31) pp. 3, 6. *C. bicordata*; HUENE (166) p. 363: KOPY (177) p. 209. *C. cf. bicordatus*; BLEICHER & MIEG (40). *C. friburgensis*, internal cast from Camporo, measured; MARIANI (222) p. 409. *C. gillieronii*; GREPPIN (138) p. 190. *C. jaccardi*; BAUMBERGER & MOULIN (23) p. 171. *C. cf. malbosi*; KILIAN & LORY (170) p. 15. *C. ovalis*; HUENE (166) pp. 350, 351: MUEHLBERG (236) pp. 320, 324: WISNIOWSKI (359) p. 232. *C. ovulum*; CHOFFAT (62) p. 184. *C. ringens*; GREPPIN (138) p. 189. *C. cf. ringens*; MUEHLBERG (236) p. 324.
- +*Collyritidae*, diagnosis, discussed; GREGORY in BATHER (19) p. 321.
- Colobocentrotus*; GREGORY in BATHER (19) p. 313. *C. atratus*; loc. cit. fig. xxxiv; ANDREWS (13) p. 117: microstructure of spine; HESSE (159) pp. 239, 244.
- Conoclypeidae*, diagnosis; GREGORY in BATHER (19) p. 316.
- +*Conoclypeus*; loc. cit. *C. ?* sp., Eocene, Somaliland; GREGORY (136) p. 42. *C. conoideus*; REIS (278) pp. 25, 26, 28, 33, 44. *C. delanouei*; FOURTAU (116) p. 483, & (119): study of variations, apical system (fig. 1), periproct (fig. 2), var. *milviformis* Greg. only individual variation; FOURTAU (117) pp. 51-55, & (118) p. 136. *C. pignatarii*, n. sp., Middle Miocene of Calabria, allied to *C. conoideus*, type in Coll. R. Liceo Visconti di Roma; ATRAGHI (3) p. 174, pl. i. *C. plagiosomus*; NELI (240) p. 415: VERRI & ANGELIS D'OSSAT (339) p. 259.
- +*Conodoxus cairolti*; CHOFFAT (62) pp. 159, 163, 193.
- Conolampas*; GREGORY in BATHER (19) p. 321.
- +*Conulus*—*C. castaneus*; RIAZ (281) p. 769. *C. vulgaris*; PAQUIER (257) pp. 427, 430.
- +*Coptodiscus*; GREGORY in BATHER (19) p. 316.
- +*Coptophyma*; GREGORY in BATHER (19) p. 312.

- †*Coptosoma*; GREGORY in BATHER (19) p. 310. *C. alexandrii*; ALESSANDRI (8) p. 552. *C. blanggianum*; OPPENHEIM (251) p. 88. *C. ghizehense*, n. sp., Mid. Eocene, Ghizeh, type in Mus. Hist. Nat. Paris; GAUTHIER in FOURTAU (115) p. 31, pl. ii. *C. speciosum*; CLARK (66) p. 339. "*C. thevestense* Per. and Gauth." Gregory is probably *C. abbatei*; FOURTAU (118) p. 137.
- Coptosominae* as tribal name replaces *Cyphosominae*; LAMBERT (187) p. 54.
- †*Coraster*; GREGORY in BATHER (19) pp. 321, 322.
- Cottaldia*; GREGORY in BATHER (19) p. 309. †*C. beneltiae*; CHOFFAT (62) pp. 150, 163, 185, 193.
- Cotteaudinae*, nov. sub-tribe of *Orthoporinae*; LAMBERT (187) p. 54.
- †*Craterolampas*; GREGORY in BATHER (19) p. 321.
- †*Crotodypeus*, place in phylogeny; LAMBERT (187) p. 49.
- †*Cyclaster*; GREGORY in BATHER (19) p. 323: vide etiam sub *Prenaster carinatus*.
- Cyphosoma* Ag. 1838; GREGORY in BATHER (19) p. 310, fig. xxviii: non Mamerheim 1837, must yield to *Phymosoma* Haime 1853 non Shipley [i.e. Qfig.], for spp. vide sub *Phymosoma*; LAMBERT (187) p. 54.
- Cyphosomatidae*, diagnosis; GREGORY in BATHER (19) p. 310.
- Cyrtoma*, incl. *Stigmatopygus*, *C. posthumum*, n. sp., Lower Miocene, L. Pueyrredon, S. Patagonia; ORTMANN (255) p. 369.
- Cystechinus*; GREGORY in BATHER (19) p. 321.
- †*Cystocidaroida*, diagnosis, incl. famm. *Palaeodiscidae* and *Echinocystidae*; GREGORY in BATHER (19) p. 300.
- Dendrasterinae*, n. subfam. of *Scutellidae*, with tribes *Scutulinae*, *Rotulinae*, *Monophorinae*; LAMBERT (187) p. 55.
- Dermatodiadema indicum*, n. sp., 470 metres, S. Nias Channel, L. DOERLEIN photo, but no description; CHUN (63) p. 362.
- †*Desorella*; GREGORY in BATHER (19) p. 320: place in phylogeny; LAMBERT (187) p. 49.
- Diadema*; GREGORY in BATHER (19) p. 309, fig. xiii: not descended fr. *Eodiadema*, but from a more ancient form; LAMBERT (187) p. 36.
- †*D.* sp., microstructure of spine; HESSE (159) p. 248. †*D. desori*; PROCHÁZKA (270) pp. 9, 19, 31: spines; PROCHÁZKA (271) pp. 20, 146: of Reuss is not a *Diadema* but based on a spine of *Echinus* type; HESSE (159) p. 250. †*D. inaequale* referred to *Loriolia* (p. 49); †*D. meriani* Quenst. non Ag., referred doubtfully to *Diademopsis* (p. 21); †*D. ruppeli*, referred to *Orthopsis* (p. 29): LAMBERT (187).
- D. saxatile*; ANDREWS (13) p. 117: habitat, distrib., colour; BEDFORD (25) p. 277. *D. setosum*; CONANT (71): anal tube, colour, irritation by spines; ANDERSON (11) pp. 13, 16: eye-spot; BATHER (19) p. 32, figg. xxv, xxvi: microstructure of spine; HESSE (159) p. 246, pl. xiii.
- Diademmatidae*, diagnosis; GREGORY in BATHER (19) p. 309: divided into sub-famm. *Diademinae*, *Tiarinae*, *Pedininae*; LAMBERT (187) p. 53.
- Diademina*, Subord. of *Diademoida*, diagnosis, divided into famm. *Orthopidae*, *Diademmatidae*, *Diplopodiidae*, *Pedinidae*, *Cyphosomatidae*, *Echinothuridae*; GREGORY in BATHER (19) p. 308.
- Diademinae*, n. sub-fam. of *Diademmatidae*, with tribes *Astropyginae* and *Aspidodiademinae*; LAMBERT (187) p. 53.
- Diademoida*, Order, diagnosis, divided into Sub-orders *Calycina*, *Arbacina*, *Diademina*, and *Echinina*; GREGORY in BATHER (19) p. 306.
- †*Diademopsis*; GREGORY in BATHER (19) p. 309: discussed, regarded as s. g. of *Hemipedinina*, of which it contains the primitive forms, diagnosis, evolution of ambulacrals (pp. 6-11), place in phylogeny (p. 50); *D. aequituberculata*, n. sp., based on Cotteau 'Ech. de l'Yonne,' pl. i, ff. 4, 8, Hettangian of Vault-de-Lugny, near Valloux (n. 14 n. 1): *D. bechei* (p. 11); *D. bonissenti* is a var. of "

- bowerbanki*, maintained (p. 16): LAMBERT (187). *D. cunningtoni*, vide sub *Hemipedina*. *D. exigua* referred to *Palaeopedina minima* (q. v.) (p. 20); *D. geveyi*, n. sp., zone of *Am. planorbis* at Aubenas, Ardèche, also in zone of *A. angulatus* (p. 19, pl. i); *D. globulus*, incl. *D. buccalis*, made type of *Palaeopedina* (q. v.) (p. 22): LAMBERT (187). *D. granulata*, vide sub *Hemipedina*. *D. heberti*, discussed and restricted, incl. *D. jauberti* as "mutation géographique, une simple Variété" (pp. 15, 20); *D. heeri*, maintained (p. 16); LAMBERT (187): microstructure of spine; HESSE (159) p. 250. *D. jauberti*, vide *D. heberti*. *D. laffoni*, rejected as insufficiently descr.; LAMBERT (187) p. 16. *D. meriani*, vide sub *Diadema*. *D. michelini*, discussed and restricted, the var. *minor* (Pal. franc. pl. 384, ff. 1, 6) belongs rather to *D. geveyi* (p. 17); *D. micropora* from Rhaetic, with a var. from Hettangian, discussed (p. 14); *D. microtuberculata*, discussed and maintained, incl. small individuals slightly different from type (p. 20); *D. quenstedti*, rejected as insufficiently characterised (p. 17); *D. serialis*, redescribed and discussed, with **varr. nov. depressa** (Desor, Synopsis, pl. xiv, ff. 12, 14) and *magnituberculata*, from zone of *Am. angulatus* in Ardèche (p. 12, pl. i); *D. tomesi*, maintained (p. 19); *D. varusensis*, maintained (p. 21): LAMBERT (187).
- †*Dictyopleurus*; GREGORY in BATHER (19) p. 312.
- Diplacida*, rejected (see general paragraph supra); LAMBERT (187) p. 53.
- Diplocidaridae*, diagnosis; GREGORY in BATHER (19) p. 303.
- †*Diplocidaris*; GREGORY in BATHER (19) p. 303. *D. cranzensis*; BENOIST (31) p. 4 [=] *D. crausiensis*, n. sp., allied to *D. gigantea*, Vesulian of St. Gaultier (Indre); LAMBERT (186) p. 476, pl. viii. *D. desori*, microstructure of spine; HESSE (159) p. 218. *D. geometrica* (p. 33), *D. gigantea* (p. 15); KILIAN & LORY (170).
- †*Diplodetus*, n. g. of Prynmodesian Spatangids, distinguished from *Pleniaster* (p. 364), with genotype *D. brevistella* Schluet. olim *Brisopsis* (p. 364), also *D. cretaceus* Schluet. olim *Brisopsis* (p. 366), and *D. (?) recklinghausenensis*, n. sp. (p. 368), all Senonian of Westphalia; SCHLUETER (299): genus criticised by LAMBERT in Review, pl. xv: vide etiam *Pleniaster*.
- †*Diplopodia*; GREGORY in BATHER (19) p. 309, fig. xxvi. *D. brongniarti*; KILIAN & LORY (170) p. 60. *D. depauperata* (pp. 150, 185), *D. deshayesi* (pp. 155, 172, 185, 193); CHOFFAT (62). *D. dubia*; KILIAN & LORY (170) p. 56. *D. lusitanica* (p. 185), *D. marticensis* (pp. 155, 163, 193); CHOFFAT (62): BLANCKENHORN (36) p. 36. *D. variolaris*; CHOFFAT (62) pp. 150, 155, 163, 172, 179, 185, 193.
- †*Diplopodiidae*; GREGORY in BATHER (19) p. 309.
- †*Diplogtagma*; GREGORY in BATHER (19) p. 309.
- Diplotheacanthus*, vide *Echinanthus*.
- †*Dipneustes*; GREGORY in BATHER (19) p. 322.
- Discooidaris*; GREGORY in BATHER (19) p. 302.
- †*Discoidea*; GREGORY in BATHER (19) p. 316, fig. xi. *D. conica*; KILIAN & LORY (170) p. 60: RIAZ (281) p. 769. *D. cylindrica*; DIBLEY (92) pp. 487, 492, 493: PAQUIER (257) p. 402. *D. dizoni*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) pp. 317, 318, 319, 324. *D. rotula*; KILIAN & LORY (170) p. 60. *D. subuculus*, op. cit. pp. 57, 60: SOEHLE (311) pp. 41, 48: WISNIOWSKI (359) p. 240.
- Discoidiidae*, diagnosis; GREGORY in BATHER (19) p. 316.
- †*Düremaster*:—*D. mur*; FOURTAU (115) p. 39: OPPENHEIM (251) p. 107. *D. schweinfurthi*, vide sub *Hemiaster*.
- Dorocidaris*; GREGORY in BATHER (19) p. 302. *D. ulcocki*; ANDERSON (11) pp. 5, 7. †*D. blakei*; DEL BUE (87) p. 129. *D. elegans*, S. Nias Channel, text-fig.; CHUN (63) p. 362. *D. papillata*, see II, f, viii;

- VERNON (337): microstructure of spine; HESSE (159) p. 226: MELI (230) p. 332.
- +*Dysaster*; GREGORY in BATHER (19) p. 321, fig. xvi. *D. granulosus*; HUENE (166) p. 359. *D. loryi* (p. 33), *D. subelongatus* (pp. 50, 52); KILIAN & LORY (170).
- +*Echinanthus*, incl. *Diplotheacanthus*; GREGORY in BATHER (19) p. 318. *E. bericus*, n. sp., Priabona beds of Brendola, type in coll. de Zigno, Padua (p. 96, pl. xxi), *E. bufo* (p. 96); OPPENHEIM (251). *E. camerinensis*; VERRI & ANGELIS D'OSSAT (339) p. 259. *E. cuvieri*; REIS (278) pp. 37, 44. *E. placenta*; OPPENHEIM (251) p. 95. *E. aff. pouechei*; REIS (278) p. 84. *E. scutella*, limits and distribution discussed (p. 93), *E. sopitanius* (p. 95); OPPENHEIM (251).
- Echinarachnius*; GREGORY in BATHER (19) p. 317. *E. excentricus*, microstructure of spine; HESSE (159) p. 254, pl. xiii: probably = *Scutella striatula* Conrad 1857 non Serres; +LAMBERT in Review of MERRIAM (175) Zool. Rec. 1899. +*E. juliensis*; HATCHER (154) pp. 101, 102. *E. parma*, original photogr.; DAVENPORT (80) fig. 187.
- Echinina*, Subord. of *Diademoida*, diagnosis, divided into Famm. *Temnopleuridae*, *Triplechinidae*, *Strongylocentrotidae*, *Echinometridae*, evolution discussed; GREGORY in BATHER (19) p. 311.
- Echininae* sub-fam. of *Echinometridae*, divided into tribes *Ortho-*, *Oligo-*, and *Poly-porinae* (qq. v.); LAMBERT (187) p. 54.
- +*Echinobrius*, vide etiam *Nucleolites*:—*E. clunicularis*; BENOIST (31) p. 3: MUEHLBERG (236) pp. 315, 320. *E. goldfusi* seu *micrulus*; BENOIST (31) p. 6. *E. aff. parallelus*; CHOFFAT (62) pp. 179, 193. *E. perroni* [sic]; GLANGEAUD (131). *E. roberti*; KILIAN & LORY (170) pp. 53, 56. *E. scutatus*; DEECKE (82) p. 25. *E. waltheri*, n. sp., Santonian of Berak el Gazal, Abou Roach, Egypt, distinguished from *Nucleolites*; GAUTHIER in FOURTAU (115) pp. 16, 21, pl. i: BLANCKENHORN (36) p. 39.
- Echinocardium* [incl. *Amphidetus*]; GREGORY in BATHER (19) p. 323: key to Belgian spp.; LAMEERE (186) p. 37: key to French spp.; ACLOQUE (1) p. 464. *E. cordatum*, habitat; ALLEN & TODD (7) p. 188: microstructure of spine; HESSE (159) p. 256, pl. xiii: (as *Amphidetus*), segmenting ovum; HAMMAR (149): see II, F, viii; VERNON (337), and GIARD (128) p. 762. +*E. saccoi*, n. sp., Plaisancian of Gebel Chelloul, Egypt, type in Mus. Hist. Nat., Paris; FOURTAU (115) p. 62, pl. iv.
- Echinocidaris*; GREGORY in BATHER (19) p. 308: key to French spp.; ACLOQUE (1) p. 463. *E. nigra*, literature; MEISSNER (229) p. 7.
- +*Echinoconus* (vide etiam *Conulus*):—*E. cf. abbreviatus*; BRYDONE (51) p. 12. *E. castanea*; CHOFFAT (62) pp. 155, 193: DIBLEY (92) p. 493: KILIAN & LORY (170) p. 60: as zonal fossil; ROWE (288) p. 318. *E. conicus*; PAQUIER (257) p. 427: DIBLEY (92) pp. 484, 488, 489, 493: as zonal fossil; ROWE (288) pp. 299, 303, 349. *E. globulus*, as zonal fossil; ROWE (288) p. 299. *E. magnificus*; FORTIN (113). *E. mixtus* (p. 60), *E. nucula* (pp. 57, 60); KILIAN & LORY (170). *E. subrotundus*; DIBLEY (92) pp. 486, 488, 490, 493: as zonal fossil; ROWE (288) pp. 318, 324. *E. vulgaris*; BRYDONE (51) p. 12: DEECKE (82) p. 71.
- Echinocorythidae*, diagnosis; GREGORY in BATHER (19) p. 321.
- +*Echinocorys*, incl. *Anandhytes*; l. c., and fig. xxxv. *E. sp.*; PAQUIER (257) p. 427. *E. (et A.) corculum*; LEBEDEW (192) p. 29. *E. (et A.) ovatus*; DEECKE (82) pp. 55, 71, 87, 90, 94: LEBEDEW (192) p. 29: REIS (279) p. 94: SCHLUETER (297) p. 419: microstructure of spine; HESSE (159) p. 261, text-fig.: var. *conicus*; DEECKE (82) p. 71: var. *perconicus*; DEECKE (82) p. 87. *E. semiglobulus*; GROSSOUVRE (145) p. 59. *E. (et A.) striatus*; DEECKE (82) p. 42. *E. (et A.) sulcata*,



- variation; GRÖNWALL '143 p. 68. *E. tenuituberculata*; GROSSOUVE (145) p. 60. *E. et. A. vulgaris*; BRYDONE '51 p. 12; DIBLEY (92) pp. 484, 489, 493; FORTIN '113; REIS '278 p. 18; SCHMIDT (301) p. cxcviii; STRAHAN (322): as zonal fossil; ROWE '288 pp. 303, 305 var. *gibbus*, as zonal fossil; ROWE (288) pp. 308, 313, 338, 342: var. *pyramidatus*, as zonal fossil; ROWE (288) pp. 297, 303, 338, 349.
- Echinocrepis*, referred to both *Spatangidae* and *Pourtalesiidae*; GREGORY in BATHER (19) pp. 321, 324.
- †*Echinocrinus* AGASSIZ 1841 preferred to *Archaeocidaris* McCoy 1844 (q.v. with genotype *Cidaris urei*, and to *Palaeocidaris* Desor 1846, with genotype *Cidaris nereis*, the name might be restricted to spp. which agree with the genotype in having radially striate scrobicules; LAMBERT (187) p. 42.
- Echinocyaminae*, n. sub-fam. of *Proscutidae*; LAMBERT (187) p. 55.
- Echinocyamus*, discussed; GREGORY in BATHER (19) p. 316, fig. xxxvii key to Belgian spp.; LAMEERE (188) p. 36: key to French spp. ACLOQUE (1) p. 464. †*E. oratus*; LOERENTHEY (204) p. 59. †*puellus*; LAMEERE (189) p. 21; †SCALIA (295) p. 9: ontogeny (p. 1 et seq., figg. vi, xiv, xv); skeletogeny (p. 28, fig. xxiv); BATHER (19) †AIRAGHI (4) p. 71: is a *Fibularia*; LAMBERT in Review: †var. *nov. rotundata*, Pliocene to recent, Calabria; STEFANO (316). †*E. pygmaea formis* [sic]; OPPENHEIM (251) p. 90. †*E. aff. scutatus*; REIS (278) p. 25. †*E. siculus*; SCALIA (295) p. 9. †*E. studeri*; VERRI & ANGELIS D'OSSA (339) p. 259.
- †*Echinocyphus*; GREGORY in BATHER (19) p. 312.
- †*Echinocystidae*, diagnosis; GREGORY in BATHER (19) p. 301.
- †*Echinocystis*, discussed; GREGORY in BATHER (19) p. 301.
- †*Echinodiadema*; GREGORY in BATHER (19) p. 309.
- Echinodiscus*; op. cit. p. 317. *E. biforis*, microstructure of spine HESSE (159) p. 253, pl. xiii. *E. laevis* blown ashore on Andamans ANDERSON (11) p. 11: incl. *Lobophora truncata* and possibly †*biforis*, variations, measurements, habitat; BEDFORD (25) p. 285.
- Echinolampas*; GREGORY in BATHER (19) p. 321. †*E. spp.*, Priabon beds; OPPENHEIM (251) p. 105. †*E. amplus*; DEPÉRET (89) p. 402 FOURTAU (115) p. 59. †*E. angulatus*; VERRI & ANGELIS D'OSSA (339) p. 259. †*E. beaumonti* Ag., redescr. and now first figd., not †*E. beaumonti* from Palarea of Cotteau, compared with *E. politus* (p. 97 pl. x), †*E. blainvillei* (p. 102, pl. ix); OPPENHEIM (251). †*E. cassinellensis* Loriol, var. nov. *depressa*, Tongrian of Bormida basin AIRAGHI (5) p. 111. †*E. discoideus*; WOLFF (360). †*E. cf. ellipsoidal*, horizon discussed; OPPENHEIM (251) p. 106. †*E. farafrahensis* n. sp., Lower Eocene, Farafrah oasis, Egypt, holotype in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 37, pl. ii. †*E. globulus* OPPENHEIM (251) p. 101: var. *minor*, considered as young of *E. globulus*, and identical with *Caratulus londinianus* Mayer-Eymar but is confined to Lower Eocene, whereas *E. globulus* is only at top of Mid. Eocene; FOURTAU (115) p. 36. †*E. hellei*; AIRAGHI (4) p. 72: should be *E. rangi*; LAMBERT in Review. †*E. hemisphaericus* ROMAN (285) p. 776: var. *linki*; ROTH v. TELEGD (286) p. 95. †*E. hydrocephalus*, n. sp., Priabona beds of Possagno, type at Univ. Padua; OPPENHEIM (251) p. 103, pl. xvii. †*E. justinae*, n. sp. Priabona beds, type at Univ. Pavia, distinguished from *E. suessi* and *E. lepsius*; OPPENHEIM (251) p. 100, pl. xvii: this is a *Progono lampas*; LAMBERT in Review. †*E. laurillardii*, history of name specimens from Bormida referred to this by Airaghi (4, Zool. Rec. 1899) are now regarded as a var. of *E. cassinellensis* (q.v.); AIRAGHI (5). †*E. lepsius*, type in coll. Lepsius, corrections of his original figure (p. 101), †*E. matheroni*, horizon discussed (p. 106), †*E. monte*

- vialensis*, distinguished from *E. beaumonti* and *E. politus* (p. 99, pl. viii), †*E. ottellii* discussed (p. 105): OPPENHEIM (251). *E. oviformis*; ANDERSON (11) pp. 5, 7. †*E. plagiosomus*; ALESSANDRI (6) pp. 550-552. †*E. posterocrassus*; CLARK (64) p. 5. †*E. scutiformis*; ROMAN (285) passim. †*E. subaffinis*, n. sp., Priabona beds of Possagno, type in coll. Oppenheim, compared with *E. affinis* and allies; OPPENHEIM (251) p. 104, pl. ix. †*E. subcylindricus*; REIS (278) p. 37. †*E. subquadratus* (p. 105), †*E. subsimilis* discussed (p. 106); OPPENHEIM (251). †*E. tumidopetalum*, not Miocene as Gregory was told by Geol. Surv. Egypt, but Eocene; FOURTAU (118) p. 137; BLANCKENHORN (37) p. 430. †*E. signoi*, n. sp., Priabona beds of Lonigo, type at Univ. Padua; OPPENHEIM (251) p. 103, pl. ix.
- Echinolampinae*; GREGORY in BATHER (19) p. 321.
- Echinometra*; GREGORY in BATHER (19) p. 313, fig. xiii. *E. lucunter* (see II, D, iii); ANDREWS (13) p. 117: endoskeleton; STEWART (318): microstructure of spine; HESSE (159) p. 245. *E. subangularis*; CONANT (71); DUERDEN (101) p. 620: microstructure of spine; HESSE (159) p. 245.
- Echinometridae*, diagnosis; GREGORY in BATHER (19) p. 313: divided into sub-famm. *Phymosominae*, *Arbaciadinae*, and *Echininae*; LAMBERT (187) p. 54.
- Echinoneidae*, diagnosis; GREGORY in BATHER (19) p. 320.
- Echinonëus*; GREGORY in BATHER (19) p. 320: place in phylogeny; LAMBERT (187) p. 49. †*E. artini*; DEPÉRET (89) p. 402. *E. cyclostomus*, colour; ANDERSON (11) p. 16.
- †*Echinopedinæ*; GREGORY in BATHER (19) p. 310.
- †*Echinopsis*; GREGORY in BATHER (19) p. 308: distinguished from *Hemipedinæ*; LAMBERT (187) p. 28. *E. sp.* nondescr.; REIS (278) p. 84.
- †*Echinospatagus leymeriei*, vide *Toxaster collegnii*.
- Echinostrephus*; GREGORY in BATHER (19) p. 313. *E. molare*, habitat; ANDERSON (11) p. 14.
- Echinothrix*; GREGORY in BATHER (19) p. 310. *E. sp.*, Diego Garcia; CHUN (63) p. 415. *E. calamaris*, anal tube, colour; ANDERSON (11) p. 13.
- †*Echinothuria*; GREGORY in BATHER (19) p. 311.
- Echinothuridae*, diagnosis, divided into sub-famm. *Pelanechininae* and *Echinothurinae*; GREGORY in BATHER (19) p. 310.
- Echinothurinae*, diagnosis, origin discussed; I. c.
- Echinus*; GREGORY in BATHER (19) p. 313, figg. i-iv and vi-viii: key to Belgian spp.; LAMEERE (188) p. 35: key to French spp.; ACLOQUE (1) p. 463. *E. sp.* nondescr.; CHUN (63) p. 158. *E. acutus*, microstructure of spine; HESSE (159) p. 243: joints; STEWART (318) p. 53: see II, F, viii. *E. angulosus*, microstructure of spine; HESSE (159) p. 243. †*E. ataxensis* and †*E. carinatus*; GROSSOUVRE (145) p. 65. *E. esculentus*; NORDGAARD (245) p. 8: see II, F, viii; DUBOIS (98): copper; DUBOIS (99): pigment; GRIFFITHS (141): host of Copepod; GIESBRECHT (129) p. 201: larvae; MACBRIDE (213, 215): muscles of lantern; STEWART (318) p. 89: microstructure of spine; HESSE (159) p. 240: descr. as typical *Ech.*; GREGORY in BATHER (19) p. 285 et sqq., figg. i, ii, vi: (incl. *E. sphaera*) distrib., habitat, general description of anatomy and life-history, so far as known, as that of a typical *Ech.*; CHADWICK (59) and CUÉNOT (75). *E. Flemingi*; NORDGAARD (245) p. 8. †*E. heberti*; GROSSOUVRE (145) p. 65. *E. horridus*; MEISSNER (229) p. 9. *E. magellanicus*; KOEHLER (180) p. 815: measurements of extremes, distrib.; MEISSNER (229) p. 10. *E. margaritaceus*, measurements, distrib.; MEISSNER (229) p. 11. *E. melo*; †AIRAGHI (4) p. 69: microstructure of spine; HESSE (159) p. 243. *E. microtuberculatus*, host of Copepod; GIESBRECHT

- (129) p. 201: chromosomes and centrosomes; BOVERI (46) pp. 343-348, pl. xiii: see II, F, viii; VERNON (337), and HERBST (156). *E. miliaris*; ALLEN & TODD (7) p. 188: segmenting ovum; HAMMAR (149): larvae; MACBRIDE (213, 215). *E. neumayeri*, n. sp., S. Georgia; MEISSNER (229) p. 12, text-fig. *E. norvegicus*, literature; MEISSNER (229) p. 11. †*E. pouechi* and †*E. rassyacensis*; GROSSOURE (145) p. 65. *E. sphaera*, observations on ova and spermatozoa; GEMMILL (125): vide etiam *E. esculentus*. *E. sphaeroides*, vide *Salmacis raris-pina*. †*E. syriacus* Conrad, 9 cotypes found at Yale; BEECHER (26). †*E. woodsi*; CLARK (64) p. 5: (?) TATE (326) p. 111.
- Ectobranchiata*, rejected (see general paragraph supra); LAMBERT (187) p. 52.
- †*Enallaster*; GREGORY in BATHER (19) p. 321, fig. xvi. *E. crisminensis*, *E. delgadoi*, *E. lepidus*, and *E. cf. oblongus*; CHOFFAT (62) p. 185. *E. peroni*, n. sp., Lower Aptian, Algeria, distinguished from *Heteraster oblongus*, towards which however a var. passes; FICHEUR (109) p. 590, pl. x. *E. pomeli*, nom. nud.; FICHEUR (108) p. 573: n. sp., Lower Aptian, couches à *Plicatula placunea*, Matmatas and Oran, Algeria, distinguished from *Heteraster couloni*; FICHEUR (109) p. 592, pl. x. *E. texana*; VAUGHAN (336) pp. 16, 84.
- †*Enallopneustes*; GREGORY in BATHER (19) p. 321.
- Encope*; GREGORY in BATHER (19) p. 317. †*E. chilensis*; MOERICKE (232) pp. 589, 609. *E. emarginata*, microstructure of spine; HESSE (159) p. 255.
- Endobranchiata*, rejected (see general paragraph supra); LAMBERT (187) p. 52.
- Endocysta*, order of Gnathostomata (see general paragraph supra); LAMBERT (187) p. 52.
- †*Endodiadema*, distinguished from *Eodiadema*; LAMBERT (187) p. 35.
- †*Enichaster*; GREGORY in BATHER (19) p. 321.
- †*Entomaster*; GREGORY in BATHER (19) p. 321.
- †*Eocidaris*, discussed and restricted (p. 38), *E. drydenensis*, possibly belongs to this genus (p. 39), *E. forbesi*, made type of *Permocidaris* (q.v.) (p. 39); LAMBERT (187). *E. keyserlingi*, microstructure of spine; HESSE (159) p. 213: vide etiam *Etiaris*. *E. laevispina* maintained in genus (p. 38); *E. laubei*, n. sp. removed from *Cidaris liagora* (Laube, pl. ix, fig. 4a) and distinguished from *E. scrobiculata* (p. 39): LAMBERT (187). *E. muensteriana*, microstructure of spine; HESSE (159) p. 213. *E. munsteri*, provisionally retained in this genus (p. 39), *E. rossica* is an *Archaeocidaris* (p. 38), *E. scrobiculata* maintained in genus (p. 38); LAMBERT (187). *E. verneuli*, vide *Permocidaris*.
- †*Eodiadema*; GREGORY in BATHER (19) p. 308: diagnosis, "Criniferen" of Quenstedt (p. 34); considered as the source of all *Glyphostomata* with crenulate tubercles (pp. 36, 50); includes following spp.:—*E. collenoti* Cott. (sub *Pseudodiadema*), *E. granulatum* Duncan, genotype, *E. laqueatum* Quenst. (sub *Cidaris*), *E. lobatum* Wright (sub *Pseudodiadema*), *E. minutum* Buckm. (sub *Echinus*), *E. octocephus* Quenst. (sub *Cidaris*), *E. pusillum*, n. sp., Toarcian of May, near Caen (pl. i), *E. regulare* Münster. (sub *Cidaris*) (p. 35); *E. minutum*, peristome only slightly glyphostomate, approaching holostomate (p. 37, fig. 7): LAMBERT (187).
- Eodiademinae*, nov., tribe of *Tiarinae*; LAMBERT (187) p. 53.
- †*Eolampas*; GREGORY in BATHER (19) p. 321.
- Eolampinae*; GREGORY in BATHER (19) p. 321.
- †*Etiaris*, n. g. "le plus ancien représentant des *Cidaroida*," with genotype *Cidaris keyserlingi* Geinitz, relations to subsequent genera discussed (p. 40); *E. grandaevus* Quenst. (sub *Cidaris*) placed here provisionally (p. 40); *E. keyserlingi*, removed from *Eocidaris* (p. 38): LAMBERT (187).
- †*Epiaster*; GREGORY in BATHER (19) p. 321. *E. blayaci*, nom. nud.;

- FICHEUR (108) p. 573: *n. sp.*, Lower Aptian, couches à *Plicatula placunea*, Matmatas, Algeria; FICHEUR (109) p. 595, pl. xi: referred, by implication, to *Hypaster*; LAMBERT in Review. *E. cf. crassissimus*; LAMBERT in RIAZ (281) p. 770: RADKEVICH (277) p. xxxvi. *E. distinctus*, probably var. of *E. crassissimus*; LAMBERT in RIAZ (281) p. 770. *E. gibbus*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) pp. 303, 305. *E. heberti*; DE STEFANO (90) p. 32. *E. leenhardtii*, *n. sp.*, Vraconnian near Uzès, type in coll. F. Leenhardt at Montauban; LORIOL (207) p. 62, pl. vi. *E. pouyannei*, nom. nud.; FICHEUR (108) p. 573: *n. sp.*, Lower Aptian, couches à *Plicatula placunea*, Matmatas, Algeria; FICHEUR (109) p. 594, pl. xi: referred to *Hypaster*; LAMBERT in Review. *E. restrictus*; BLAYAC (39): FICHEUR (108) p. 572. *E. trigonalis*; RIAZ (281) p. 769.
- Euclidaris*, sp., Diego Garcia; CHUN (63) p. 415.
- Euechinoidea*, Sub-class, rejected (see general paragraph supra); GREGORY in BATHER (19) p. 299: LAMBERT (187) p. 52.
- Eupatagus*; GREGORY in BATHER (19) p. 323. *E.*, sp.; ANDERSON (11) p. 7. †*E. tellinii*, vide *Euspatangus minutus*.
- †*Eurhodia*; GREGORY in BATHER (19) p. 321.
- †*Eurypneustes*; GREGORY in BATHER (19) p. 313.
- †*Euspatangus*:—*E. bicarinatus*, redescr., incl. *E. elatus* and *E. cor* Mazzetti; OPPENHEIM (251) p. 117, pl. xvii. *E. cairensis*, a mutation of *E. formosus*, and confined to Lutetian II; FOURTAU (117) p. 57. "*E. cotteui* Lor." Gregory, is *Plesiospatangus*; FOURTAU (118) p. 135. *E. formosus*, confined to Lutetian I; FOURTAU (117) p. 56. *E. minutus*, redescr., incl. *E. pavayi* Koch, *Spatangus pantanellii*, *Hypospatangus pentagonalis*, and *Eupatagus tellinii* Mazzetti; OPPENHEIM (251) p. 116, pl. x. *E. ornatus*, horizon and distribution in S.E. Europe; OPPENHEIM (250) p. 115: horizon doubtful; OPPENHEIM (251) p. 118. *E. peroni*, *n. sp.*, Lower Eocene, Gebel Haridi, Egypt, type in Mus. Hist. Nat. Paris; GAUTHIER in FOURTAU (115) p. 52, pl. iii. *E. tournoueri*, redescr.; OPPENHEIM (251) p. 115, pl. x. *E. vicinus*, *n. sp.*, Lower Eocene, Gebel Abou el Fodah, near Manfalout, Egypt, type in Mus. Hist. Nat. Paris; GAUTHIER in FOURTAU (115) p. 54, pl. iii.
- Evechinus*; GREGORY in BATHER (19) p. 313.
- Exocysta* as Order of *Gnathostomata*, divided into Suborders *Pileatoida* and *Clypeastroida*; LAMBERT (187) p. 55.
- Faorina*; GREGORY in BATHER (19) p. 322.
- †*Faujasia*; GREGORY in BATHER (19) p. 321.
- Fibularia*; GREGORY in BATHER (19) p. 317. *F.*, sp.; ANDERSON (11) p. 6. †*F. gregata*; CLARK (64) p. 5: TATE (326) p. 111.
- Fibulariidae*, diagnosis; GREGORY in BATHER (19) p. 317.
- Fibularinae*, subfam. of *Proscutidae*; LAMBERT (187) p. 55.
- †*Gagaria*, vide *Orthechinus*.
- †*Galeaster*; GREGORY in BATHER (19) p. 321.
- †*Galerites*; GREGORY in BATHER (19) p. 316, fig. xxxv. *G. abbreviatus*; DEECKE (82) pp. 55, 73. *G. albogalerus*, *G. laevis*, and *G. subrotundus*; WISNIEWSKI (359) p. 241. *G. vulgaris* incl. *G. abbreviatus* and *G. roemeri*; DEECKE (82) pp. 55, 73, 87, 94.
- Galeritidae*, diagnosis; GREGORY in BATHER (19) p. 316.
- Galeroclypeus*; GREGORY in BATHER (19) p. 320.
- †*Galeropygus*, in *Pygasteridae* (p. 316), referred to *Echinoneidae* (p. 320); GREGORY in BATHER (19): place in phylogeny; LAMBERT (187) pp. 43, 48. *G.*, cf. *caudatus*; MUEHLBERG (236) p. 302.
- †*Gaultieria*; GREGORY in BATHER (19) p. 323.
- †*Gauthieria*; GREGORY in BATHER (19) p. 310: place in phylogeny; LAMBERT (187) p. 49.

- Genicopatagus*, referred to *Spatangidae adetinae*; GREGORY in BATHER (19) p. 321.
- †*Gibbaster*; GREGORY in BATHER (19) p. 323.
- Glyphocyphinae* Duno., diagnosis; GREGORY in BATHER (19) p. 312: tribe of *Tiarinae*; LAMBERT (187) p. 53.
- †*Glyphocyphus*, incl. *Rhabdopleurus*; GREGORY in BATHER (19) p. 3. *G. radiatus*, as zonal fossil; ROWE (288) p. 318.
- †*Glyptechinus*; GREGORY in BATHER (19) p. 313.
- †*Glypticus*; GREGORY in BATHER (19) p. 307. *G. hieroglyphicus*; HUN (166) p. 356.
- Gnathostomata*, Order, diagnosis, divided into Suborders *Holotypinae* & *Clypeastrina*; GREGORY in BATHER (19) p. 315.
- Goniocidarid*; GREGORY in BATHER (19) p. 302. *G. canaliculata*, mic structure of spine; HESSE (159) p. 208, pl. xii. *G. mortenseni*, n. sp. 'Belgica' expedition; KOEHLER (180) p. 816. *G. subaria*, mic structure of spine; HESSE (159) p. 226.
- †*Goniophorus*; GREGORY in BATHER (19) p. 306.
- Goniopneustes*; GREGORY in BATHER (19) p. 313.
- †*Goniopygus*; GREGORY in BATHER (19) p. 307. *G.*, cf. *brossardi*; CHOFFAT (63) pp. 172, 193. *G. delphinensis* (pp. 53, 56), *G. intricatus* (p. 53), *G. loryi* (p. 56); KILIAN & LORY (170). *G. major* (p. 172), *G. mona* (pp. 155, 159, 163, 166, 172, 179, 193), *G. peliatus* (p. 184); CHOFFAT (63).
- Grammochinus*; GREGORY in BATHER (19) p. 313.
- †*Grasia*; GREGORY in BATHER (19) p. 321. *G. elongata*; KILIAN & LORY (170) p. 33.
- †*Gustaria*; GREGORY in BATHER (19) p. 321.
- Gymnocidarid* A. Ag. 1863 with genotype *Cidaris metularia* is not *Gymnocidarid* Ag.; LAMBERT (186) p. 483.
- †*Gymnocidarid* Ag. 1838, revived with genotype *G. diademata* Ag. (= *Hemicidarid*), and including *Hemipygus* as syn.; LAMBERT (1) p. 482. *G. coesmanni*, n. sp., Vesulian of St Gaultier (Inde); LAMBERT (186) p. 479, pl. viii; BENOIST (31) p. 4. *G. minor* and *pustulosa*; LAMBERT (186) p. 483.
- †*Gymnodiadema*; GREGORY in BATHER (19) p. 308.
- Gymnopatagus*, n. g. near *Eupatagus* with genotype *G. valdiviae*, n. sp., 1134 metres, Somali coast, figd. but not descr.; DOEDERLEIN in CHOFFAT (63) p. 495.
- †*Hagenovia*; GREGORY in BATHER (19) p. 321.
- †*Haima*; GREGORY in BATHER (19) p. 320.
- †*Hecistocyphus* Pomel, based on *Diademopsis serialis* var. *bonissenti* "suite d'une erreur d'observation"; LAMBERT (187) p. 20.
- †*Helikodiadema*; GREGORY in BATHER (19) p. 309.
- Heliocidarinae*, nov. sub-tribe of *Polyporinae*; LAMBERT (187) p. 55.
- Hemiaster*; GREGORY in BATHER (19) p. 323, figg. xliii, xlvii. *H.* s. KOEHLER (180) p. 815. †*H.* sp. indet.; SCHLUETER (297) p. 4. †*H. adonensis* (pp. 155, 193), †*H. alcantarensis* (pp. 155, 166, 193); CHOFFAT (62). †*H. archiaci*, vide sub *Trachyaster*. *H. benensis*; BLANCKENHORN (36) table, p. 33: DE STEFANO (90) p. 1. †*H. bellasensis*; CHOFFAT (62) pp. 150, 155, 185, 193. †*H. blankhorni*, [sic], n. sp., Santonian of Berak el Gazal, Abou Roach, Egypt in Mus. Hist. Nat. Paris; GAUTHIER in FOURTAU (115) p. pl. i. †*H. canavarii*; MARIANI (224). *H. cavernosus*, literature colour in life; MEISSNER (229) p. 13. †*H.*, cf. *cenomanensis*, d'Av. CHOFFAT (62) p. 44. †*H. cubicus*; BLANCKENHORN (36) pp. 28, 29. †*H. delgadoi*; CHOFFAT (62) pp. 150, 155, 163, 185, 193. †*H. fornali*; FOURTAU (115) p. 13: vide etiam sub *Periaster roachensis*. † aff. *fornali*, Cenomanian of Abu Roach (p. 34); BLANCKENHORN

(36). †*H. n. sp. aff.ourneli*, Santonian, *ibid.* (pp. 34, 39); BLANCKENHORN (36). †*H. lageensis* de Lor. in litt.; CHOFFAT (62) p. 193. †*H. lorioli*, microstructure of spine; HESSE (159) p. 261. †*H. lusitanicus*; CHOFFAT (62) pp. 150, 155, 185, 193: in Egypt, discussed; BLANCKENHORN (36) p. 34. †“*H.*, cf. *lusitanicus* de Lor.” of Blanckenhorn is *H. pseudo-fourneli* and is not to be confused with *Periaster roachensis*; FOURTAU (120) p. 630. †*H. minimus*; KILIAN & LORY (170) p. 61: as zonal fossil; ROWE (288) p. 317. †*H. palpebratus*; CHOFFAT (62) pp. 155, 193. †*H. parastatus*; CLARK (66) p. 330. †*H. pseudo-fourneli*; FOURTAU (119) & (120) p. 630. †*H.*, cf. *pullus*; FRECH (124) p. 307. †*H. recklinghausenensis* referred to *Plenaster = Diplodetus*; SCHLUETER (297) p. 418. †“*H. schweinfurthi* Lor.” Gregory, is *Ditremaster*; FOURTAU (118) p. 136. †*H. scutiger* (pp. 150, 155, 163, 172, 173, 179, 185, 193), dwarf (p. 44), †*H.*, cf. *similis* (pp. 159, 163, 193), †*H. subtilis* (p. 185), †*H.*, cf. *subtilis* (pp. 168, 173, 193), †*H. tumidosus* (pp. 155, 172, 185, 193), †*H.*, cf. *tumidosus* (p. 179); CHOFFAT (62).

†*Hemicidaridae*, diagnosis; GREGORY in BATHER (19) p. 307.

†*Hemicidaris*; GREGORY in BATHER (19) p. 307, figg. xvi, xx: split into three genera, *Pseudocidaris*, *Gymnocidaris*, and *Hemicidaris* s. str. with genotype *H. crenularis*; LAMBERT (186) p. 482. *H. abyssinica*, var. *depressa*; ANGELIS D'OSSAT & MILLOSEVICH (16) p. 156. *H. agassizi*, restr. and maintained (p. 480), *H. cartieri*, distinguished from *H. agassizi* (p. 481) and is not a *Prodiadema* (p. 483); LAMBERT (186). *H. clunifera*; KILIAN & LORY (170) p. 53. *H. crenularis*, microstructure of spine; HESSE (159) p. 218. *H. diademata*, distinguished from *H. agassizi*, uncertainty owing to defective figures, nevertheless selected as type for the re-established *Gymnocidaris* L. Ag., previously without genotype indicated; LAMBERT (186) pp. 480-483. *H. granulosa* vide sub *Asterocidaris*. *H. hofmanni*; DEECKE (82) p. 24. *H. intermedia*; HUENE (166) pp. 355, 356, 364: microstructure of spine; HESSE (159) p. 218. *H. langrunensis*; BENOIST (31) p. 3: MUEHLBERG (236) p. 312: Cott., of type-locality, is young of *H. lucensis*; but *H. lorioli*, n. sp., is based on specimens from Bernese Jura descr. as *H. langrunensis* (Loriol, Echinol. Helvét. Jurass., pl. xiv, ff. 20-22); LAMBERT (186) p. 478. *H. luciensis*; BENOIST (31) p. 4: variations in the type-locality descr. and explained, incl. *H. langrunensis* as young; LAMBERT (186) p. 476. *H. purbeckensis*; GLANGEAUD (131). *H. pustulosa*; BENOIST (31) p. 5: vide etiam sub *Gymnocidaris*. *H. undulata*, microstructure of spine; HESSE (159) p. 219.

†*Hemipatagus*; GREGORY in BATHER (19) p. 321.

†*Hemipedina*; GREGORY in BATHER (19) p. 309: discussed, its relations to *Diademopsis* (p. 6), restr. and diagnosed, with genotype *H. etheridgei*; LAMBERT (187) p. 28. *H. aspera*, really comes from beds of *Stephanoceras humphriesi*; GREPPIN (138) p. 188. *H. bonei*, doubtfully referred to *Palaeopedina* (p. 27), *H. cunningtoni* Wright, referred doubtfully to *Diademopsis* (p. 21), *H. davidsoni*, referred to *Orthopsis* (p. 29), *H. granulata* Merian, referred doubtfully to *Diademopsis* (p. 21): LAMBERT (187). *H. mairei*, n. sp., Bathonian near Belfort, type in coll. V. Maire at Gray; LORIOL (207) p. 56, pl. vii. *H. microgramma*, referred to *Orthopsis*; LAMBERT (187) p. 29. *H. perforata*; GREPPIN (138) p. 188. *H. saemanni*, referred to *Orthopsis*; LAMBERT (187) p. 29. Other spp. referred to s. g. *Diademopsis* (q.v.); LAMBERT (187).

†*Hemipneustes*; GREGORY in BATHER (19) p. 321. *H. striato-radiatus*, microstructure of spine; HESSE (159) p. 261.

†*Hemipygus* Etallon, syn. of *Gymnocidaris* Ag.; LAMBERT (186) p. 483.

- †*Hemitariis* Pomel, syn. of *Hemicidaris* based on accidental fusions of plates arising in individual growth; LAMBERT (186) p. 478.
- †*Heteraster*:—*H. couloni*; FICHEUR (109) p. 593: KILIAN & LORY (170) pp. 53, 56. *H. oblongus*; FICHEUR (109) p. 591: KILIAN & LORY (170) pp. 53, 56.
- Heterocentrotus*; GREGORY & BATHER (19) p. 313, fig. xxxiii. *H. mamillatus*, joints; STEWART (318): (incl. *H. carinatus*), microstructure of spine; HESSE (159) pp. 239, 244. *H. trigonarius*, microstructure of spine; HESSE (159) pp. 239, 245.
- †*Heterocidaris*; GREGORY in BATHER (19) p. 309.
- †*Heteroclypeus*; op cit. p. 321: COTTEAU 1891, is syn. of *Hypoclypeus* Pomel 1869; LAMBERT in Review of AIRAGHI (3). *H. elegans*, n. sp., Miocene of Sardinia, allied to *H. semiglobus*, type in Mus. civico Milano (p. 176, pl. i); *H. nevanii*, n. sp., Middle Miocene of Calabria, allied to *H. subpentagonalis*, type in Coll. R. Liceo Visconti di Roma (p. 177, pl. i): AIRAGHI (3).
- †*Heterodiadema*; GREGORY in BATHER (19) p. 309: place in phylogeny; LAMBERT (187) p. 49. *H. libycum*; BLANCKENHORN (38) p. 36: CHOFFAT (62) pp. 150, 155, 163, 172, 185, 193. *H. ouremense*; CHOFFAT (62) pp. 150, 155, 185, 193.
- Heterognatha* Bernard rejected; LAMBERT (187) p. 55.
- †*Heterolampas*; GREGORY in BATHER (19) p. 321.
- †*Heterosalenia*; GREGORY in BATHER (19) p. 306.
- Hipponoz*, vide etiam *Tripaneustes*. *H. esculenta*; CONANT (71): DUERDEN (101) p. 620: microstructure of spine; HESSE (159) p. 245. *H. variegata* ditto, loc. cit.
- †*Holaster*; GREGORY in BATHER (19) p. 321. *H. carinatus*; RADKEVICH (277) p. xxvi. *H. cf. carinatus*; BLANCKENHORN (38) p. 25. *H. cordatus*; KILIAN & LORY (170) p. 50. *H. cordiformis* Sorign., vide sub *Cardiaster maximus*. *H. intermedius*; KILIAN & LORY (170) p. 50. *H. laevis*; op. cit. p. 61: RIAZ (281) p. 769. *H. olivalensis* de Lor. in litt.; CHOFFAT (62) pp. 159, 193. *H. perezii*; KILIAN & LORY (170) p. 57: variations from type, incl. *H. bisulcatus* Gras, and perhaps *H. brongniarti*, but perhaps not *Cardiaster perezii* Wright; LORIOU (207) p. 60, pl. vi. *H. cf. perezii*; KILIAN & LORY (170) p. 56. *H. placenta*; DIBLEY (92) pp. 489, 490, 493: as zonal fossil; ROWE (288) pp. 309, 312, 316, 328. *H. planus*; DEECKE (82) pp. 42, 55 (?): DIBLEY (92) pp. 486, 488, 490, 493: STRAHAN (322): as zonal fossil; ROWE (288) pp. 309, 312, 314, 316. *H. subglobosus*; DIBLEY (92) pp. 487, 494: PAQUIER (257) p. 402: RIAZ (281) p. 768. *H. cf. subglobosus*; KILIAN & LORY (170) p. 61: RADKEVICH (277) p. xxxvi. *H. suborbicularis*; WISNIOWSKI (359) p. 241. *H. syriacus* Conrad, holotype and 17 paratypes found at Yale; BEECHER (26). *H. trecensis*; DIBLEY (92) pp. 488, 494.
- Holactypina*, Subord. of *Gnathostomata*, diagnosis, divided into Fam. *Pygasteridae*, *Discoidiidae*, *Galeritidae*, and *Conoclypeidae*; GREGORY in BATHER (19) p. 315.
- †*Holactypus*; GREGORY in BATHER (19) p. 316: place in phylogeny; LAMBERT (187) p. 48. *H. arenatus*; KOBAYASHI (177) p. 209. *H. cenomanensis*; FOURTAU (119). *H. aff. cenomanensis*; CHOFFAT (62) pp. 155, 159, 163, 179, 193. *H. corallinus*; DEECKE (82) p. 24; *H. depressus*; BENOIST (31) p. 3: MUEHLBERG (236) pp. 313, 315, 320, 324: WISNIOWSKI (359) p. 232. *H. excisus* [sic]; CHOFFAT (62) pp. 150, 185. *H. excisus*, Santonian as well as Cenomanian; FOURTAU (115) p. 21. *H. macropygus*; BAUMBERGER & MOULIN (23) p. 159. *H. micropygus*; CHOFFAT (62) p. 184. *H. neocomiensis*; KILIAN & LORY (170) p. 60. *H. ouremensis*; CHOFFAT (62) pp. 155, 179, 193.
- Holopneustes*; GREGORY in BATHER (19) p. 313.

- †*Homoeaster*; GREGORY in BATHER (19) p. 323.  
*Homolampas*; GREGORY in BATHER (19) p. 323.
- †*Homotoechus*, vide *Perischocidaris*.
- †*Hybechinus* Desor [err. pro *Hypechinus*]; GREGORY in BATHER (19) p. 313.
- †*Hypechinus patagonicus*; HATCHER (154) pp. 101, 102.
- †*Hypoclypeus*, referred to *Echinoneidae*; GREGORY in BATHER (19) p. 320: place in phylogeny; LAMBERT (187) p. 48. *H. gibberulus*; MUEHLBERG (236) p. 320.
- †*Hypodiadema* Desor, discussed; LAMBERT (187) p. 33: maintained with a new genotype *Hemicidaris saleniformis*; the true type was *Diadema lamarcki* Desm., referred subsequently by Desor to *Acrosalenia*; *Hemicidaris rathieri* Cott. is added as "neotype"; and *Gymnotiara Pomel* [type *G. varusensis*] regarded as simple syn. [though if the genus as now defined does not include *H. lamarcki*, it would be more correct to adopt Pomel's name]; LAMBERT (186) p. 484. *H. desori* Capellini is based on a fragment of *Diademopsis serialis* (p. 13), *H. varusense*, relations to *Eodiadema* (p. 36); LAMBERT (187).
- †*Hypsaster*, discussed; SCHLUETER (299) p. 364. *H. blayaci*, and *H. pouyannet*, vide sub *Epiaster*.
- Hypsoclypeus*, vide *Heteroclypeus*.
- †*Hypsospatagus* (vel *Hypsospatangus*); GREGORY in BATHER (19) p. 323: may or may not have subanal fasciole; GAUTHIER in FOURTAU (115) pp. 51, 57, 58. "*H. sp.*" Gregory, doubtful if of this genus; FOURTAU (118) p. 137. *H. sp.*, Priabona beds; OPPENHEIM (251) p. 114. *H. lefebvrei*, remains in the genus though it has a sub-anal fasciole; FOURTAU (115) p. 58. *H. pentagonalis*, vide *Euspatangus minutus*. *H. santamariai* [sic] n. sp., Lower Eocene, Gebel Haridi, Egypt, type in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 56, pl. iv.
- †*Ilariona*; GREGORY in BATHER (19) p. 320.
- †*Inflataster* is syn. of *Physaster* Pomel, which is not an Ananchitid but an Aeropid; LAMBERT in Review of ANTHULA.
- †*Infraclypeus*, referred to *Echinoneidae*; GREGORY in BATHER (19) p. 320.
- †*Infulaster*; GREGORY in BATHER (19) p. 321. *I. excentricus*, incl. *I. hagenowi* Borch.; DEECKE (82) p. 42.
- †*Iraniasaster*; GREGORY in BATHER (19) p. 323.
- Irrregularia*, Sub-class, diagnosis, divided into Orders *Gnathostomata* and *Atelostomata*; GREGORY in BATHER (19) p. 315.
- †*Iaster*; GREGORY in BATHER (19) p. 321.
- †*Isopneustes*; GREGORY in BATHER (19) p. 323.
- †*Jeronia*; GREGORY in BATHER (19) p. 321.
- †*Koninkocidaris*; GREGORY in BATHER (19) p. 302.
- Laganidae*, diagnosis; GREGORY in BATHER (19) p. 317.
- Laganum*; GREGORY in BATHER (19) p. 317. *L. sp.*; ANDERSON (11) p. 5. *L. sp.*, hybrid; BEDFORD (25) p. 285, pl. xxiii. †*L. balestras*, n. sp., Priabona beds of La Granella near Priabona, type in Museo civico Bassano; OPPENHEIM (251) p. 91, pls. ix, x. *L. decagonale*, colour, variations, measurements; BEDFORD (25) p. 284, pl. xxiii. *L. depressum*; ANDERSON (11) p. 11: growth-stages figd.; BEDFORD (25) p. 283, pl. xxiii. †*L. fragile*; OPPENHEIM (251) p. 91.
- †*Lambertia* Oppenheim 1899, nom. preocc. Desvoidy 1863, et Souverbie 1869, mut. in *Oppenheimia*; COSSMANN (73): compared with *Nacospatangus* and *Atelospatangus* (p. 112), the name *Oppenheimia* Cossm. substituted (p. 338), and *L. gardinaliei* redescri. (p. 113, pl. x); OPPENHEIM (251).
- †*Lambertiaaster*; GREGORY in BATHER (19) p. 323.
- †*Lampadaster*; GREGORY in BATHER (19) p. 321.
- †*Lanieria*; GREGORY in BATHER (19) p. 316.
- Leiocidarinae*, vide *Liocidarinae*.



- Leiocidaris*, relations to *Rhabdocidaris* discussed; OPPENHEIM (2) p. 84: key to French spp.; ACLOQUE (1) p. 463. +*L.* cf. *a* microstructure of spine (p. 224), +*L. itala*, ditto (p. 225); HE (159): Dames' description corrected, distinguished from *Cid calamus*, probably not known from Egypt; OPPENHEIM (251) p. pl. xvii: specimen figured by Lorient probably not same sp. as + figd. by Koch; LAMBERT in Review.
- +*Leiocyphus*; GREGORY in BATHER (19) p. 312.
- +*Leiopodina*; GREGORY in BATHER (19) p. 313. *L. samusi*; OPPENHEIM (251) p. 89. *L. tallavignesi*, distribution discussed; OPPENHEIM (3) p. 87: spines from Vicentin so referred by Dames probably belong to a *Cidarid*; HESSE (159) p. 225.
- +*Leiosoma* Cott.; GREGORY in BATHER (19) p. 310. *L. jauberti*, referred to *Phymechinus*; LAMBERT (186) p. 489.
- +*Lenita*; GREGORY in BATHER (19) p. 317.
- +*Lepidechinus*; GREGORY in BATHER (19) p. 301.
- +*Lepidesthes*; GREGORY in BATHER (19) p. 305.
- +*Lepidesthidae*, diagnosis; GREGORY in BATHER (19) p. 304.
- +*Lepidocentridae*, diagnosis; GREGORY in BATHER (19) p. 301.
- +*Lepidocentrus*; GREGORY in BATHER (19) p. 301, fig. xv.
- +*Lepidocidaris*; GREGORY in BATHER (19) p. 302.
- Lepidopleurus* Dunc. & Slad. non Risso; GREGORY in BATHER (19) p.
- +*Leptocidaris*; op. cit. p. 307: distinguished from *Hemipedina*; LAMBERT (187) p. 28. *L. blaburensis*, vide sub *Mesodiadema*.
- Leskia*, vide *Palaeostoma*.
- +*Linchophorus*; GREGORY in BATHER (19) p. 323.
- Linopneustes*; GREGORY in BATHER (19) p. 323.
- Linthia*; loc. cit. +*L. aschersoni* probably not identical with *L. esnehe* as Gregory supposes, but with *L. cavernosa*; FOURTAU (118) p. *L. cavernosa*, variations from type, compared with *L. aschersoni* which is probably a syn. of this and not of *L. esnehe* as Gregory thinks GAUTHIER in FOURTAU (115) p. 39. +*L. heberti*, Gascon and Vicentin types compared; OPPENHEIM (251) p. 107. +*L. oblonga*; BLANCH HORN (36) p. 38. +*L. perfossa*; REIS (278) p. 84. +*L. pseudocalis* n. sp., Priabona beds of Priabona, type in Mus. f. Nat. Berlin, also other localities and museums, compared with spp. *Schizaster* and *Linthia*; OPPENHEIM (251) p. 107, pl. x: this should not be left in *Linthia*; LAMBERT in Review. +*L. aff. subglobosa* REIS (278) p. 84.
- Liocidarinae*, nov. tribe of *Stereocidarinae*; LAMBERT (187) p. 53.
- Lobophora truncata*, vide *Echinodiscus laevis*.
- +*Loriolia*, incl. *Heterotiar* and *Colpotiar* Pomel, place in phylogeny; LAMBERT (187) p. 49. *L. inaequale* (olim *Diadema*); LAMBERT (187) p. 49.
- Lovenia*; GREGORY in BATHER (19) p. 323. *L. elongata*; ANDERSON (5) p. 5: distrib.; BEDFORD (25) p. 286. +*L. forbesi*; CLARK (64) p. 7. *L. gregalis*; ANDERSON (11) p. 7.
- +*Lysechinidae*, diagnosis; GREGORY in BATHER (19) p. 305.
- +*Lysechinus*, discussed; GREGORY in BATHER (19) p. 305.
- +*Macraster*; GREGORY in BATHER (19) p. 321.
- Macropneustes*; GREGORY in BATHER (19) p. 323. +*M.?* compressus KOCH (178) p. 56. +*M. crassus*, not a *Megapneustes* now that diagnosis of that genus is altered; GAUTHIER in FOURTAU (115) p. +*M. prevosti*, figd.; BOURSALT (45).
- +*Magnosia*; GREGORY in BATHER (19) p. 309. *M. camarensis*; CHODAT (62) p. 184. *M. globulus* and *M. pulchella*; KILIAN & LORY (187) p. 56.
- Marettia*; GREGORY in BATHER (19) p. 323. +*M. ovata*; WOLFF (3)

- M. planulata*, microstructure of spine; HESSE (159) p. 259. *Megalaster*; GREGORY in BATHER (19) p. 321.
- †*Megapneustes*, this genus was based only on the absence of the sub-anal fasciole, a character to be used with great reserve in older forms, in fact the name was confessedly introduced "pour éviter à quelque confrère inconnu la peine de faire ce genre et de me mettre en Synonymie"; now a specimen of the genotype, *M. grandis*, shows traces of this fasciole, so to distinguish the genus from *Macropneustes* stress is now laid on the presence of tubercles on the interporiferous areas; but *Megapneustes* as thus defined differs from *Hypsospatangus* only by the depression of the ambulacra "quelquefois bien faible"; GAUTHIER in FOURTAU (115) p. 50; LAMBERT in Review confirms approximation to *Hypsospatangus*, but remarks that Echinoid genera are now-a-days instituted on ridiculously finikin distinctions. *M. lorioli*, n. sp., Lower Eocene, Gebel Haridi, Egypt, holotype in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 48, pl. iv.
- Melitella*; GREGORY in BATHER (19) p. 317.
- Mellita*; GREGORY in BATHER (19) p. 317. *M. saxforis*; CONANT (71).
- M. testudinata*, breeding period; WILSON (355) p. 351.
- †*Melonechinus* M. & W. supersedes *Melonites* Norw. & Owen non Lam.; LAMBERT (187) p. 53.
- †*Melonites*; GREGORY in BATHER (19) p. 304: vide ante.
- †*Melonitidae*, diagnosis; GREGORY in BATHER (19) p. 304: altered to *Melonechinidae*; LAMBERT (187) p. 53.
- †*Melonitoida*, Order, diagnosis, divided into Famm. *Palaeoschinidae*, *Melonitidae*, *Lepidesthidae*; GREGORY in BATHER (19) p. 303.
- Meoma*; GREGORY in BATHER (19) p. 323.
- †*Mesodiadema*, distinguished from *Hemipadina* (p. 28), diagnosis (p. 31), considered as the source of all *Pedininae* (p. 32), archaic characters (p. 36); *M.?* *admeto* Quenst. non Münt. (sub *Cidaris*; Die Echin. pl. lxxviii, f. 143, non 144) (p. 32); *M.?* *blaburensis* Quenst. (sub *Leptocidaris*) (p. 31); *M. criniferum* Quenst. (sub *Cidaris*) (p. 31); *M. olifer* Quenst. (sub *Cidaris*) (p. 31); *M. simplex*, n. sp., "Lias moyen de Venarey" (p. 31), "Charmouthien de Mussy" explic. de pl. i, f. 10: LAMBERT (187).
- Mespilia*; GREGORY in BATHER (19) p. 313. *M. globulus*, microstructure of spine; HESSE (159) p. 243.
- Metalia*; GREGORY in BATHER (19) p. 323: incl. *Plagionotus* Ag. and *Plagiobrius* Pomel; SCHLUETER (299) p. 362. *M. maculosa*; ANDERSON (11) p. 16: microstructure of spine; HESSE (159) p. 261. *M. sternalis*, habitat, distrib., measurements; BEDFORD (25) p. 286.
- †*Metaporhinus*; GREGORY in BATHER (19) p. 321. *M. convexus*, internal cast from Camporo, measured; MARIANI (222) p. 410.
- †*Micraster*; GREGORY in BATHER (19) p. 323. *M.* sp., microstructure of spine; HESSE (159) p. 260, text-fig. *M. breviporus*, incl. *M. borchhardtii* Hag.; DEECKE (82) p. 42. *M. coranguinum*; REIS (278) p. 3: incl. *Spatangus cuneatus* Hag.; DEECKE (82) pp. 71, 72: quoted by C. F. Roemer from Recklinghausen is perhaps *Diplodetus recklinghausenensis*; SCHLUETER (299) p. 368: and var. *laticus*; DIBLEY (92) pp. 484, 486, 488, 489, 493: var. *laticus* as zonal fossil; ROWE (288) p. 303: var. *rostratus* as zonal fossil; ROWE (288) p. 300. *M. corbovis*; DIBLEY (92) pp. 486, 488, 493: STRAHAN (322): as zonal fossil; ROWE (288) pp. 313, 316, 320. *M. cortestudinarium*; DEECKE (82) pp. 92, 94: DIBLEY (92) pp. 490, 493: STRAHAN (322): as zonal fossil; ROWE (288) pp. 303, 308, 328. *M.* cf. *cortestudinarium*, descr.; PETRACKER (265) p. 35. *M. decipiens*, incl. *M. cortestudinarium* Auctt. from Miélandre; PAQUIER (257) pp. 427, 436. *M. gibbus*; REIS (278) n. 4. *M. glyphus*; SCHMIDT (301) p. cxviii. *M. la*

- 488, 493: as zonal fossil; ROWE (288) p. 313. *M. normanniae*; RIAZ (281) p. 770. *M. praecursor*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) pp. 303, 308. *M. rostratus* Bucaille, validity and horizontal extension; FORTIN (114): the sp. not due to Bucaille but to Mantell; LAMBERT in Review of FORTIN (113). *M. tercensis*; GROSS-OUVRE (145) p. 65.
- Microcyphus*; GREGORY in BATHER (19) p. 313.
- †*Microdiadema*; GREGORY in BATHER (19) p. 309.
- †*Microlampas*; GREGORY in BATHER (19) p. 321.
- †*Micropedina*; GREGORY in BATHER (19) p. 310. *M. olisoponensis* (pp. 155, 172, 179, 193); *M. rotularis* (p. 184): CHOFFAT (62).
- †*Micropsina*; GREGORY in BATHER (19) p. 313.
- †*Micropsis*; GREGORY in BATHER (19) p. 310. †*M. fraasi*, Mid. Eocene; FOURTAU (115) p. 34. †*M. mokattamensis*; FOURTAU (116) p. 482.
- Micropyga*; GREGORY in BATHER (19) p. 309.
- Milletia*; GREGORY in BATHER (19) p. 321.
- †*Miocidaris* Doederl., relations to *Eotiaris* (p. 40); *M. amalthei* Quenst. (sub *Cidaris*) from Charmouthian of Venarey (Côte-d'Or) plates only, previous alleged occurrences in France refer to *Rhabdocidaris moreaui* (p. 41, pl. i): LAMBERT (187).
- †*Miorthopsis* Pomel, based on 'hemiliocyclic' apex, "une disposition secondaire due au développement du péripacte et insuffisante pour justifier le genre"; LAMBERT (187) p. 29.
- †*Miotoxaster exilis*; CHOFFAT (62) p. 185.
- †*Mistechinus sickembergeri* [sic], n. sp., Mid. Eocene, N. of Minieh, Egypt, holotype in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 32, pl. ii.
- Moira* (vel *Moera*); GREGORY in BATHER (19) p. 323: key to French spp.; ACLOQUE (1) p. 464. *M. atropos*, breeding period; WILSON (355) p. 351.
- Moiropsis*; GREGORY in BATHER (19) p. 323.
- †*Monodiadema*, distinguished from *Eodiadema*; LAMBERT (187) p. 35.
- Monophora*; GREGORY in BATHER (19) p. 317.
- Monoplacida*, rejected (see general paragraph supra); LAMBERT (187) p. 53.
- †*Monostychia*; GREGORY in BATHER (19) p. 318. *M. australis*?; TATE (326) p. 111.
- Mortonia*; GREGORY in BATHER (19) p. 317.
- Moulinsia*; GREGORY in BATHER (19) p. 317.
- Nacospatangus*; GREGORY in BATHER (19) p. 323.
- †*Neocatopygus*; GREGORY in BATHER (19) p. 321.
- Neolampas*; GREGORY in BATHER (19) p. 321.
- Neopneustes*; GREGORY in BATHER (19) p. 323.
- †*Nucleolites*, incl. *Echinobrissus* (q.v.); GREGORY in BATHER (19) p. 320: place in phylogeny; LAMBERT (187) p. 49.
- Nucleolitidae*, diagnosis; GREGORY in BATHER (19) p. 320.
- †*Nucleopygus*; GREGORY in BATHER (19) p. 320.
- †*Offaster*; GREGORY in BATHER (19) p. 321. †*O. pilula*; FORTIN (113): as zonal fossil; ROWE (288) pp. 333, 342.
- Oligopodia*; GREGORY in BATHER (19) p. 320.
- Oligoporinae*, nov. tribe of *Echininae*, with sub-tribes *Pleurechinae*, *Triplechinae*, *Schizechinae*; LAMBERT (187) p. 54.
- †*Oligoporus*; GREGORY in BATHER (19) p. 304. *O. minutus*, redescr., measurements; BEEDE (29) p. 49, pl. vii.
- Oligopygus*; GREGORY in BATHER (19) p. 320.
- †*Oolaster*; GREGORY in BATHER (19) p. 321.
- †*Opechinus*; GREGORY in BATHER (19) p. 312.
- †*Opissaster cotteaui*, vide etiam sub *Schizaster*.

*Oppenheimia* **nom. nov.** pro *Lambertia* (q.v.) Oppenheim 1899, non Desvoidy 1863 nec Souverbie 1869; COSSMANN (73): accepted; OPPENHEIM (251) p. 338: only differs from *Atelospatangus* by the interior fasciole, the existence of which, however, is very doubtful and not shown in the figure; LAMBERT in Review.

- +*Oriolampas*; GREGORY in BATHER (19) p. 321.
- +*Ornithaster*; GREGORY in BATHER (19) p. 323.
- +*Orthechinus*, incl. *Gagara*; GREGORY in BATHER (19) p. 310. *O. (Triplacidia) biarrützensis*; OPPENHEIM (251) p. 87.
- Orthocidarinae*, **n. sub-fam.** of *Cidaridae*; LAMBERT (187) p. 53.
- +*Orthocidaris*; GREGORY in BATHER (19) p. 302.
- Orthognatha* Bernard rejected; LAMBERT (187) p. 55.
- Ortholophinae*, diagnosis; GREGORY in BATHER (19) p. 312.
- Ortholophus*; GREGORY in BATHER (19) p. 312.
- Orthoporinae*, **nov.** tribe of *Echininae*, with sub-tribes *Prototiarinae*, *Cotteaudinae*, *Temnechinae*; LAMBERT (187) p. 54.
- Orthopidae*, diagnosis; GREGORY in BATHER (19) p. 308.
- +*Orthopsis*; GREGORY in BATHER (19) p. 308: distinguished from *Hemipedina*, genotype is *Cidaris miliaris* d'Arch.; LAMBERT (187) p. 28. *O. davidsoni*, vide sub *Hemipedina*. *O. flouessi*, maintained; *O. globosa*, its aberrant nature, a return to *Mesodiadema* features: LAMBERT (187) p. 29. *O. microgramma*, vide sub *Hemipedina*. *O. miliaris*; CHOFFAT (62) pp. 166, 172, 193: Egyptian specimens of small size; FOURTAU (115) p. 20. *O. morgani*, its aberrant nature, a return to *Diademopsis*; *O. ovata*, maintained; *O. peroni*, maintained: LAMBERT (187) p. 29. *O. repelini*; CHOFFAT (62) p. 184. *O. repellini*; KILIAN & LORY (170) p. 56. *O. ruppeli*, vide sub *Diadema*. *O. saemanni*, vide sub *Hemipedina*. *O. similis* Stoliczka, Senonian, India "me parait constituer le type d'un genre particulier, *Stephanopsis*" (q.v.); *O. varusensis*, maintained: LAMBERT (187) p. 29.
- +*Oviclypeus*; GREGORY in BATHER (19) p. 316.
- +*Orulaster*; GREGORY in BATHER (19) p. 321.
- +*Pachyclypeus*, referred to *Pygasteridae* (p. 316), to *Echinoneidae* (p. 320); GREGORY in BATHER (19).
- +*Palaeochinidae*, diagnosis; GREGORY in BATHER (19) p. 304.
- +*Palaeochinoidea*, Sub-class, rejected; GREGORY in BATHER (19) p. 299. See also General Paragraph, supra.
- +*Palaeochinus*; GREGORY in BATHER (19) p. 304, fig. xvi.
- Palaeobrissus*, referred to *Spatangidae adestinae*; GREGORY in BATHER (19) p. 322.
- +*Palaeocidaris* syn. of *Echinocr.* (q.v.); LAMBERT (187) p. 42.
- +*Palaeodiscidae*, diagnosis; GREGORY in BATHER (19) p. 300.
- +*Palaeodiscus*, discussed; GREGORY in BATHER (19) p. 301.
- +*Palaeolumpas*; GREGORY in BATHER (19) p. 321.
- +*Palaeopedina* [errore *Palaeo*, *Paleo*, *Paloe*, *Paloso*, et *Poeloeopedina*], **n. g.** allied to *Hemipedina*, with genotype *Diadema globulus* Ag. (vide infra) (p. 22), place in phylogeny (p. 49); LAMBERT (187). *P. bonei*, vide sub *Hemipedina*. *P. globulus* (Ag.), accepted in sense of Cotteau (Paleont. franc. pl. 385), i.e. Leymerie's diagnosis not figures, = Agassiz cast of *Hemicidaris buccalis* T. 65 (p. 22, text-figg. 4-6); *P. minima* Ag. (sub *Diadema*), incl. *Diademopsis exigua* Cott. as young (p. 27); *P. pacomei* Cott. (sub *Diademopsis*), discussed (p. 27): LAMBERT (187).
- Palaeopneustes*; GREGORY in BATHER (19) p. 322. *P. sp. nondescr.*, 8° 37' N., 75° 37' E., 224 fms., 200 specimens, colour; ANDERSON (11) p. 7. *P. niasicus*, **n. sp.**, 470 metres S. Nias Channel, L. DOERDERLEIN photo, but no description; CHUN (63) p. 362.
- Palaeostoma*, incl. *Leskia*; GREGORY in BATHER (19) p. 323.
- Palaeostomidae*, diagnosis; loc. cit.

- Palaeotropus*; loc. cit. *P. hirondellei*; RICHARD (282) p. 79, figg. 28, 29.  
*Palaeopedina*, vide *Palaeopedina*.  
*Palaeopedina*, vide *Palaeopedina*.  
†*Parabrisus pseudoprenaster*; OFFENHEIM (251) p. 112.  
†*Paracidaris* Pomel, based on grouping of primaries which is accidental and exceptional only; LAMBERT (187) p. 37.  
†*Paradoxechinus*; GREGORY in BATHER (19) p. 312.  
†*Paralampas*; op. cit. p. 321.  
*Parasalenia*; op. cit. p. 313. *P. gratiosa*, Invisible Bank, Andaman Is.; ANDERSON (11) p. 16.  
†*Pedina*; GREGORY in BATHER (19) p. 309, fig. xvii. *P. antiqua*, relations to *Diademopsis*; LAMBERT (187) p. 30. *P. inflata*; GREPPIN (138) p. 189.  
*Pedinidae*, diagnosis; GREGORY in BATHER (19) p. 309.  
*Pedininae*, sub-fam. of *Diadematidae* with tribes *Orthopsinae* and *Climapedinae*; LAMBERT (187) p. 53.  
†*Pedinopsis*; GREGORY in BATHER (19) p. 313. *P. desori*; CHOFFAT (62) p. 185. *P. meridanensis*; KILIAN & LORY (170) p. 66.  
†*Pedinothuria*; GREGORY in BATHER (19) p. 310.  
*Pelanechininae*, diagnosis; loc. cit.  
†*Pelanechinus*; loc. cit.  
†*Peltastes*; op. cit. p. 306: place in phylogeny; LAMBERT (187) p. 49. *P. studeri*; KILIAN & LORY (170) p. 60.  
†*Periaster roachensis*, n. sp., Turonian of El Gâa, Abou Roach, Egypt, perhaps = *Hemiasterourneli* Auclt., type in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 24, pl. i: not to be confused with *Hemiaster pseudo-fourneli*; FOURTAU (120) p. 630.  
*Pericormus*; GREGORY in BATHER (19) p. 323. *P. sp.*, hitherto only known fossil, now found in Moxos Is. and off Port Blair, 55 fms.; ANDERSON (11) pp. 5, 10. †*P. marianii* (p. 552), †*P. spatangoides* (pp. 550-552); ALESSANDRI (6).  
†*Perischocidaris*, incl. *Homotoechus*; GREGORY in BATHER (19) p. 304.  
†*Perischodomus*; op. cit. p. 302.  
†*Permocidaris*, n. g. of *Archaeocidaridae*, comprising *P. coaevus* Quenst. (sub *Cidaris*), *P. forbesi* Kon. (sub *Cidaris*) as genotype, and *P. verneuili* King (sub *Archaeocidaris*); LAMBERT (187) pp. 39, 47.  
*Peronella decagonalis*; ANDERSON (11) p. 7.  
†*Peronia*; GREGORY in BATHER (19) p. 308.  
†*Phalacrechinus*, n. g. of *Echininae* "à tubercules incrénelés, limités à la face ovale," with genotype *Pleurodiadema gauthieri* Cott. of Bathonian; LAMBERT (187) p. 37.  
†*Phalacropedina*, n. s.-g., a name that could be given to a sub-genus that might be carved out of *Hemipedina* by taking *H. guerangeri* as type, along with *H. calva*, *H. pusilla*, and *H. minima*, "si l'on tient à créer...un sous-genre nouveau"; LAMBERT (187) p. 30. [Mr Lambert kindly informs me that he does consider this a subgenus, with "une valeur au moins égale à *Diademopsis*."]   
†*Pholidocidaris*; GREGORY in BATHER (19) p. 305.  
*Phormosoma*; op. cit. p. 311. *P. sp.*, Nias Channel; CHUN (63) p. 362.  
*P. uranus*, galls of parasitic copepod; RICHARD (282) p. 80, figg. 30, 32.  
*Phyllacanthus annulifera*; ANDERSON (11) p. 5. *P. dubia*, microstructure of spine; HESSE (159) p. 236. *P. imperialis*, ditto; loc. cit.: joints; STEWART (318).  
†*Phyllobrissus*; GREGORY in BATHER (19) p. 321. *P. duboisi*; BAUMBERGER & MOULIN (23) pp. 167, 176. *P. gresslyi*; CHOFFAT (62) p. 184. *P.*, cf. *gresslyi*; BAUMBERGER & MOULIN (23) p. 171.  
*Phylloclypeus*; GREGORY in BATHER (19) p. 321.  
†*Phymechinus*; op. cit. p. 309. *P. benoisti*, n. sp., Vesulian of l'Indre,

- allied to *P. mirabilis*; LAMBERT (186) p. 488, pl. viii: BENOIST (31) p. 4.
- †*Phymopedina*, distinguished from *Hemipedinia*; LAMBERT (187) p. 28.
- †*Phymosoma* Haime 1853 preferred to *Cyphosoma* Ag. (q. v.), but "*Phymosoma* Shippey, récemment proposé pour des *Holothuries* devra être abandonné et je propose de le remplacer par *Prophymosoma*" (q. v.); LAMBERT (187) p. 54. *P. sp.* nondescr.; SCHLUETER (297) p. 420. *C.* [i.e. *P.*] *abbatei*; BLANCKENHORN (36) p. 34: Santonian not Turonian; FOURTAU (115) p. 21. *C.* [i.e. *P.*] *alcantarensis*; CHOFFAT (62) pp. 172, 179, 193. *C.* [i.e. *P.*] *corollare*; DIBLEY (92) p. 493: as zonal fossil; ROWE (288) p. 304. *C.* [i.e. *P.*] *cribrum*; OPPENHEIM (251) p. 86. *C.* [i.e. *P.*] *debile*; CHOFFAT (62) p. 184. *C.* [i.e. *P.*] *granulosum*, microstructure of spine; HESSE (159) p. 223. *C.* [i.e. *P.*] *koenigi*; DIBLEY (92) pp. 488, 489, 493: as zonal fossil; ROWE (288) p. 304: microstructure of spine; HESSE (159) p. 222. *P. loryi*; KILIAN & LORY (170) p. 56. *C.* [i.e. *P.*] *microstoma*; CHOFFAT (62) p. 184. *P. princeps*; BRYDONE (51) p. 12: (p. 71) and *P. cf. princeps* (p. 55); DEECKE (82). *C.* [i.e. *P.*] *radiatum*; DEECKE (82) p. 43: DIBLEY (92) pp. 486, 493: as zonal fossil; ROWE (288) p. 313. *C.* [i.e. *P.*] *ribeiroi*; CHOFFAT (62) p. 185. *C.* [i.e. *P.*] *simplex*; BRYDONE (51) p. 12. *C.* [i.e. *P.*] *spatuliferum*, as zonal fossil; ROWE (288) p. 304. *P. taeniatum*; DEECKE (82) p. 71. *C.* [i.e. *P.*] *wetherelli*; BRYDONE (51) p. 12.
- Phymosominae*, n. sub-fam. of *Echinometridae*; LAMBERT (187) p. 54.
- †*Physaster*, vide sub *Infustaster*.
- Pileatoida*, Sub-order of *Exocysta*, comprises *Pygasteridae* and *Galeritidae*; LAMBERT (187) p. 55.
- †*Pileus*, referred to *Pygasteridae* (p. 316) to *Echinoneidae*; GREGORY in BATHER (19) p. 320.
- Placodiadema*; GREGORY in BATHER (19) p. 309, fig. xxv.
- Plagiobrissus*, vide *Metalia*.
- Plagionotus*, vide *Metalia*.
- Platybrissus*; GREGORY in BATHER (19) p. 322. *P. roemeri*; ANDERSON (11) p. 5.
- †*Plegiocidaris* Pomel, relations to *Eotiaris* (p. 40); *P. desori* Cott. 1857 (sub *Cidaris*) (p. 48); *P. ilminsterensis*, at May? (p. 47); *P. martini* Cott. (sub *Cidaris*) discussed (p. 40); *P. moorei* from couches à *Leptaena*, May, Calvados (p. 47); *P. senex*, n. sp., "la petite espèce du Rhétien d'Oberdorf, décrite sous le nom de *Cidaris desori*" [author and date not stated], non. *C. desori* Cott. 1857 (p. 48): LAMBERT (187).
- Plesianthus*; GREGORY in BATHER (19) p. 318. †*P. testudinarius*; WOLFF (360).
- †*Plesiaster*, discussed (p. 363); *P. (?) cavifer*, n. sp. († n. g., LAMBERT in Review), "Quadraten-Kreide," zone of *Becksia soekelandi*, Westphalia (p. 371, pl. xvii); *P. (?) cordiformis*, n. sp., Lower *Mucronatus* beds, Westphalia (p. 372, pl. xvi); *P. minor* Schluet. olim *Brissoptis* († n. g. LAMBERT in Review), redescr. (p. 369, pl. xvi): SCHLUETER (290). *P. cf. recklinghausenensis* from Brunswick; SCHLUETER (297) p. 418.
- †*Pleniocidaris* Pomel, apparently retained as subgen. of *Pseudocidaris* and with genotype *P. alpinu* Ag. (sub *Hemicidaris*), considered as source of *Hemicidarinae*; LAMBERT (186) p. 482.
- †*Pleniocidaroida*, Order, diagnosis, divided into Fam. *Tiarechinidae*, *Lysechinidae*; GREGORY in BATHER (19) p. 305.
- †*Plesiadiadema insignitum*; CHOFFAT (62) p. 185.
- †*Plesiolampas*; GREGORY in BATHER (19) p. 321.
- †*Plesiospatangus cotteauvi*, only the two genital pores of the left side present in this species; FOURTAU (115) p. 51: vide etiam sub *Euspatangus*.
- Pleurechinae*, nov. sub-tribe of *Oligoporinae*; LAMBERT (187) p. 54.

- Pleurechinus*; GREGORY in BATHER (19) p. 312.  
 †*Pleurodiadema*; op. cit. p. 309. *P. gauthieri*, vide *Phalacrechinus*.  
 †*Plistophyma*; GREGORY in BATHER (19) p. 309.  
*Podocidaris*; GREGORY in BATHER (19) p. 308.  
*Poeloopedina*, vide *Palaeopedina*.  
 †*Polycidaris*; GREGORY in BATHER (19) p. 302. *P. ludovici* (Menez  
 BETTONI (34) p. 11.  
 †*Polycyphus*; GREGORY in BATHER (19) p. 310. *P. normannus*; BEN  
 (31) pp. 3, 4.  
*Polyplocida*, rejected (see general paragraph supra); LAMBERT (187) p.  
*Polyporinae* tribe of *Echininae*, with sub-tribes *Spherechininae*, *Troch-*  
*sominae*, *Heliocidarinae*, *Acrocladinae*; LAMBERT (187) p. 54.  
 †*Pomelia*, n. g. of *Cassidulidae* allied to *Faujasia* (p. 66), with genotyp  
*delgadoi*, n. sp., Senonian of Portugal, type at Direct. trav. |  
 Lisbon (p. 67, pl. vi); LORIOI (207).  
*Porocidaris* sp.; KOEHLER (180) p. 815. *P. elegans* see *Dorocidaris*.  
*schmideli*; OPPENHEIM (251) p. 85; FOURTAU (116) pp. 481, 490  
 var. *aegyptica*, microstructure of spine; HESSE (159) p. 225.  
*serrata*, ditto; loc. cit.  
*Pourtalesia*, discussed; GREGORY in BATHER (19) p. 323. *P. sp. Lacca-*  
*sea*; ANDERSON (11) p. 10.  
*Pourtalesiidae*, diagnosis, discussed; GREGORY in BATHER (19) p. 323.  
 †*Prenaster*; loc. cit. *P. sp.* (p. 44), *P. alpinus* (p. 37); REIS (278).  
*arabicus*, n. sp., Lower Eocene, Gebel Haridi, Egypt, type in B  
 Hist. Nat., Paris; GAUTHIER in FOURTAU (116) p. 46, pl. ii. *P. l-*  
*cus*; OPPENHEIM (251) p. 111. *P. carinatus*, very different from o  
*Prenaster*, possibly *Cyclaster*; LAMBERT in Review of ANTHULA.  
 †*Prodiadema* Pömel, maintained as sub-genus of *Gymnocidaris*, v  
 genotype *Cidaris agassizi* Roem. but not *Hemicidaris cartieri*; I  
 BERT (186).  
*Progonolampas*, vide sub *Echinolampas justinae*.  
*Proscutidae*, n. fam., divided in sub-famm. *Echinocyaminae* and *Fib-*  
*rinae*; LAMBERT (187) p. 55.  
*Protoctamys*, nom. nov. pro *Echinites* Duncan, non Leske, nec Müll  
 Trosch., a genus of *Discoidiidae*; GREGORY in BATHER (19) p. 316.  
 †*Prototiara*, rediagnosed, archaic characters (p. 36), relations to *Ple-*  
*diadema*, considered as source of *Salmacinae*, *Arbaciadinae*,  
*Echininae* (p. 37), genotype *P. jutieri* Cott. (sub *Pleurodiade-*  
 place in phylogeny (p. 50); LAMBERT (187).  
*Prototiarinae*, nov. sub-tribe of *Orthoporinae*; LAMBERT (187) p. 54.  
*Prymnadetinae*, section of *Spatangidae*; GREGORY in BATHER (19) p.  
*Prymnodesminae*, ditto; op. cit., p. 323.  
*Psammechinus*; GREGORY in BATHER (19) p. 313; key to French s  
 ACLOQUE (1) p. 463. *P. duciei* is a *Schizechinus*; FOURTAU (1  
 p. 138. †*P. dubius*; DOUXAMI (95) p. 420. †*P. gravesi*; PÁLFY (1  
 p. 64. †*P. hiselyi*; BAUMBERGER & MOULIN (23) p. 159. †*P. ly-*  
 is a *Taxophyma*, s. g. of *Anapesus*; FOURTAU (118) p. 138. *P. n-*  
*aris*, see II, F, viii; HARD (127). †*P. mirabilis*, microstructur  
 spine; HESSE (159) p. 243. †*P. tenuis*; BAUMBERGER & MOULIN  
 pp. 171, 191. †*P. theveneti*; KILIAN & LORY (170) p. 56. †*P. w-*  
*wardii*, microstructure of spine; HESSE (159) p. 244.  
 †*Pseudananchys* sp.; PAQUIER (257) p. 402.  
*Pseudoboletia*; GREGORY in BATHER (19) p. 313.  
 †*Pseudocutopygus*; GREGORY in BATHER (19) p. 321.  
 †*Pseudocidaris* Etallon, revived with genotype *P. thumanni* [sic] Ag. (  
*Hemicidaris*); LAMBERT (186): place in phylogeny; LAMBERT (1  
 p. 50. *P. clunifera* and *P. crispicans*; CHOFFAT (62) p. 184.  
*peroni* vide sub *Asterocidaris*.

- †*Pseudodesorella*; GREGORY in BATHER (19) p. 321.
- †*Pseudodiadema*; GREGORY in BATHER (19) p. 309, figg. xxiii, xxiv: relations to *Eodiadema*; LAMBERT (187) p. 36. *P. alcantarense* pp. 150, 155, 163, 166, 172, 179, 185, 193; *P. bourgueti* (p. 184), *P. delgadoi*? (p. 184), *P. delicatulum* (p. 185); CHOFFAT (62). *P. diatretum*; CLARK (66) p. 339. *P. guerangeri*; CHOFFAT (62) pp. 150, 155, 163, 172, 185, 192. *P. interjectum*; CHOFFAT (62) pp. 150, 159, 163, 185, 193: redescr. from fresh specimens; LORIOL (207) p. 68, pl. vii. *P. lobatum*, microstructure of spine; HESSE (159) p. 219. *P. lusitanicum* (pp. 155, 172, 192), *P. macropygus* (pp. 150, 185); CHOFFAT (62). *P. mamillatum*; DEECKE (82) p. 24. *P. orbigny*; BENOIST (31) p. 4: a Rauracian and Sequanian sp. now found in Vesulian, extraordinary example of specific longevity; LAMBERT (186) p. 487. *P. ornatum*; DIBLEY (92) p. 493. *P. pentagonum*; BENOIST (31) p. 3: GREPPIN (138) p. 197. *P. pseudodiadema*, type being lost, specimen from Neuchatel (Agassiz Echin. Suisses, pl. xvii, ff. 49, 53) is taken as neotype, and compared with *P. sequini*; LAMBERT (186) p. 487. *P. rotulare*; BAUMBERGER & MOULIN (23) p. 159: KILIAN & LORY (170) p. 52. *P. schluteri* (p. 185), *P. scruposum* (p. 185), *P. aff. sculptile* (pp. 172, 193); CHOFFAT (62). *P. sequini*, n. sp., Vesulian of l'Indre; LAMBERT (186) p. 486, pl. viii: BENOIST (31) p. 4. *P. somaliense*, n. sp., Bihendula Limest. (Bathonian or Callovian), S. of Berbera, Somaliland; GREGORY (136) p. 41, figg. 4, 5: not a *Pseudodiadema*, but intermediate between *Micropsidia* & *Prototia* by the side of *Progonochinus*; LAMBERT in Review. *P. subcomplanatum*; BENOIST (31) p. 3. *P. superbum*; KOPY (177) p. 209: LORIOL (206) p. 182. *P. variolare*, microstructure of spine; HESSE (159) p. 223.
- †*Pseudopedina*; GREGORY in BATHER (19) p. 309.
- †*Pseudosalenia delgadoi*; CHOFFAT (62) p. 185.
- †*Pygaster*; GREGORY in BATHER (19) p. 316, figg. xi, xxiv: place in phylogeny; LAMBERT (187) p. 48.
- Pygasteridae*, diagnosis; GREGORY in BATHER (19) p. 316: divided in sub-famm. *Holactypinae* and *Discoidinae*; LAMBERT (187) table B, p. 50.
- Pygastrides*; GREGORY in BATHER (19) p. 316.
- †*Pygaulus*; GREGORY in BATHER (19) p. 320. *P. cylindricus* (pp. 53, 57), *P. depressus* (p. 53), *P. desmoulinsi* (p. 56); KILIAN & LORY (170).
- †*Pygorhynchus*; GREGORY in BATHER (19) p. 321.
- †*Pygorhytis*; GREGORY in BATHER (19) p. 321.
- †*Pygospatangus*; GREGORY in BATHER (19) p. 323.
- †*Pygurostoma*; GREGORY in BATHER (19) p. 321.
- †*Pygurus*; GREGORY in BATHER (19) p. 321: place in phylogeny; LAMBERT (187) p. 49. *P. sp.*; KILIAN & LORY (170) p. 51. *P. blumenbachi*; DEECKE (82) p. 25: HUENE (166) p. 365. *P. buchi* (p. 171), *P. gillieron* (p. 166), *P. rostratus* (pp. 171, 190); BAUMBERGER & MOULIN (23). *P. cf. rostratus*; CHOFFAT (62) p. 184.
- †*Pyrina*; GREGORY in BATHER (19) p. 320. *P. cylindrica*; KILIAN & LORY (170) pp. 56, 57. *P. desmoulinsi*; DEECKE (82) p. 71. *P. globosa*; CHOFFAT (62) p. 184. *P. incisa*, loc. cit.: BAUMBERGER & MOULIN (23) p. 171. *P. junqueiroensis*; CHOFFAT (62) p. 185. *P. pygoea*; KILIAN & LORY (170) pp. 37, 50, 52.
- †*Rachiosoma paucituberculatum*; KILIAN & LORY (170) p. 52.
- †*Radiocyphus*, vide *Arachniopleurus*.
- Regularia Ectobranchiata*, Subclass, diagnosis, incl. only Order *Diademoida*; GREGORY in BATHER (19) p. 306.
- Regularia Endobranchiata*, Subclass, diagnosis, divided into Orders, *Bothriocidaroida*, *Cystocidaroida*, *Cidaroida*, *Melastomoida*, *Melastomoida*; GREGORY in BATHER (19) p. 300 et.



*Rhabdocidarinae*, nov. tribe of *Stereocidarinae*; LAMBERT (187) p. 53.

*Rhabdocidaris*; GREGORY in BATHER (19) p. 302: relations to *Leiocidaris* discussed; OPPENHEIM (251) p. 84. †*R. anglosuevica*, microstructure of spine (p. 217), †*R. anhaltina*, ditto (p. 224); HESSE (159). *R. annulifera*, incl. *Schleinitzia crenularis*, habitat, distrib., growth-changes; BEDFORD (25) p. 274, pl. xxi. *R. baculosa*, Mauritian var. of *De Loriol* is constant in Andaman Sea and is separate sp.; ANDERSON (11) p. 5. *R. bispinosa*, valid; BEDFORD (25) p. 273. †*R. bonolai*, n. sp., Cenomanian, beds with *Neolobites vibrayeanus*, Beharieh oasis, Egypt, holotype in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 8, pl. i. †*R. caprimontana*; KILIAN & LORY (170) p. 33: microstructure of spine; HESSE (159) p. 232: var. *remus*; BLEICHER & MIEG (40). †*R. cascaesensis*; CHOFFAT (62) p. 184. †*R. copeoides*, microstructure of spine; HESSE (159) p. 232. †*R. crameri*; BLANCKENHORN (36) p. 39: notes; FOURTAU (115) p. 17. †*R. delgadoi*; CHOFFAT (62) p. 184. †*R. dubia*; AIRAGHI (4) p. 69. †*R. horrida*; GREPPIN (138) p. 187: MUEHLBERG (236) p. 306: STRUEBIN (324) pp. 335, 336, 337: TOBLER (328) p. 291. †*R. imperialis*, probably incl. *Dorocidaris papillata* var. *calabra* De Stefani; AIRAGHI (4) p. 68. †*R. insueta*; CHOFFAT (62) p. 184. †*R. jauberti* (pp. 50, 52), †*R. kiliani* (pp. 49, 50); KILIAN & LORY (170). †*R. lacertosa*; CHOFFAT (62) p. 184. †*R. libyensis*, the trivial name is "sinon un barbarisme, tout au moins un néologisme parfaitement inutile"; FOURTAU (118) p. 137. †*R. maxima*, microstructure of spine; HESSE (159) p. 218. †*R. mespilum*; OPPENHEIM (251) p. 84. †*R. moreaui* vide sub *Miocidaris amalthei*. †*R. navillei*, an Indian sp. from Egypt, fragments descr.; FOURTAU (115) p. 29. †*R. nobilis*; KILIAN & LORY (170) p. 15: microstructure of spine; HESSE (159) p. 233. †*R. orbignyana*, ditto; loc. cit. †*R. schlumbergeri*; CHOFFAT (62) p. 184. †*R. trispinata*, microstructure of spine; HESSE (159) p. 233. †*R. tuberosa*; BAUMBERGER & MOULIN (23) p. 171: CHOFFAT (62) p. 184: KILIAN & LORY (170) p. 50.

†*Rhabdopleurus*, vide *Glyphocyphus*.

*Rhinobriassus*; GREGORY in BATHER (19) p. 323.

†*Rhoëchinus*; op. cit. p. 304.

*Rhynchopygus*; op. cit. p. 321.

*Rotula*, and *R. augusti*; op. cit. p. 317, fig. ix.

*Rotuloidea*; GREGORY in BATHER (19) p. 317.

*Runa*; loc. cit.

*Salenia*; op. cit. p. 306, figg. xiii, xvi, xix. *S.* sp.; ANDERSON (11) p. 5. †*S. bellula*; CLARK (66) p. 339. †*S. choffati*; CHOFFAT (62) p. 185. †*S. fraasi*, redescr. from Santonian of Egypt, differences from *De Loriol's* description; FOURTAU (115) p. 18. †*S. granulosa*; DEECKE (82) p. 71: as zonal fossil; ROWE (288) p. 318. †*S. lusitanica*; CHOFFAT (62) p. 185. †*S. prestensis*; KILIAN & LORY (170) pp. 56, 57. †*S. cf. prestensis*; FICHEUR (108) p. 572. †*S. pygmaea* and †*S. scutigera*; DEECKE (82) p. 71. †*S. tumidula*; CLARK (66) p. 339.

*Saleniidae*, diagnosis; GREGORY in BATHER (19) p. 306.

*Salmacis*; op. cit. p. 312. †*S.* sp.; WOLFF (360). *S. globator* Bell (an L. Agass. ?), incl. "*S. sulcatus*" Sladen, habitat, colour of spines, measurements (p. 282, pl. xxii); *S. rarispinia*, probably = *Echinus sphaeroides* Linn., measurements (p. 283); *S. sulcata*, distrib., relation to *S. alexandri*, colour in life, measurements (p. 281, pl. xxii): BEDFORD (25).

*Salmacopsis*; GREGORY in BATHER (19) p. 313.

†*Sarsellu*; op. cit. p. 323.

†*Scagliaster*, literary history; SCHLUETER (299) p. 375.

†*Scaptodiadema*, distinguished from *Hemipedinia*; LAMBERT (187) pp. 28, 30.

- Schizaster*; GREGORY in BATHER (19) p. 323. *S. sp.*; ANDERSON (11) p. 6: +VERRI & ANGELIS d'OSSAT (339) p. 259: Bouvet Id.; CHUN (63) p. 495: microstructure of spine; +HESSE (159) p. 260. +*S. ambulacrum*; OPPENHEIM (251) p. 110. +*S. ameghinoi*; HATCHER (154) pp. 101, 102. +*S. canaliferus*; MELI (230) p. 332: descr. and measurements; COPPA (72) p. 36: microstructure of spine; HESSE (159) p. 259. +*S. foveatus*; FOURTAU (116) p. 482. *S. fragilis*; DOEDERLEIN (93) p. 197: KNIPOVICH (175) pp. 452, 458. +*S. cf. karreri*; LOERENTHEY (204) p. 61. +*S. legraini*, n. sp., Helvetian of Gebel Ramlieh, Egypt, type in Mus. Hist. Nat., Paris; FOURTAU (115) p. 60, pl. iii. +*S. lucidus*; OPPENHEIM (251) p. 110. *S. moseleyi*; MEISSNER (229) p. 15. *S. philippii*, measurements of several specimens, much variation; loc. cit. +*S. rimosus*; OPPENHEIM (251) p. 110. +*S. santamariai* [sic], n. sp., Lower Eocene, Gebel Haridi, Egypt, holotype in Mus. Hist. Nat., Paris; GAUTHIER in FOURTAU (115) p. 44, pl. iii. +*S. studeri*; OPPENHEIM (251) p. 111. +"*S. thebensis* Lor." Gregory, is *Opissaster*; FOURTAU (118) p. 136. +*S. vicinalis*; OPPENHEIM (251) p. 111.
- Schizechinae*, nov. sub-tribe of *Oligoporinae*; LAMBERT (187) p. 54.
- Schleinitzius crenularis*, vide *Rhabdocidaris annulifera*.
- +*Scotopendrites* Gesner 1565, is a spine of a *Tiaris*; LAMBERT (186) p. 483.
- Scutella*; GREGORY in BATHER (19) p. 317, fig. xxxv. *S. excentricus*, meaning of its asymmetry; HARRINGTON (152). +*S. innesi*; DEPÉRET (89) p. 402. +*S. interlineata*, by position of periproct approaches *Scutulum* Tournouer; LAMBERT in Review of MERRIAM (175) Zool. Rec. 1899. +*S. paulensis* not a mere var. of *S. subrotunda* as maintained by Gregory; FOURTAU (118) p. 137. +*S. striatula*, vide *Echinarachnius excentricus*. +*S. subrotunda*; ?LOERENTHEY (204) p. 59: measurements; COPPA (72) p. 35. +*S. truncata*, ditto; COPPA (72) p. 36.
- Scutellidae*, diagnosis; GREGORY in BATHER (19) p. 317: divided into sub-fam. *Arachninae* and *Dendrasterinae*; LAMBERT (187) p. 55.
- +*Scutellina*; GREGORY in BATHER (19) p. 317. *S. patella*; CLARK (64) p. 5: TATE (326) p. 111.
- Scutulinae* (vel *Scrutulinae* [sic] ?) nov. tribe of *Dendrasterinae*; LAMBERT (187) p. 55.
- +*Sismondia*; GREGORY in BATHER (19) p. 317. *S. occitana*; PÁLIFY (256) p. 64. *S. rosacea*, distinguished from *S. planulata*; OPPENHEIM (251) p. 90.
- Spatagocystis*, referred to *Spatangidae Adetinae* (p. 322), and to *Pourtalesidae* (p. 324); GREGORY in BATHER (19) fig. xlv.
- Spatangidae*, diagnosis, divided into sections—*Adetinae*, *Prymnadetinae*, and *Prymnodesminae*; op. cit. p. 321.
- +*Spatangomorpha*; GREGORY in BATHER (19) p. 323.
- Spatangus*; loc. cit. & figg. xi, xxxviii, xlv, xlv: key to French spp.; ACLOQUE (1) p. 464: key to Belgian spp.; LAMEERE (188) p. 36: +*S. sp.* Miocene; NELLI (240) p. 415: microstructure of spine; HESSE (159) p. 258. +*S. austriacus*?; DEL BUE (87) p. 129. +*S. corsicus*; ALESSANDRI (6) p. 552. +*S. hoffmanni*, microstructure of spine; HESSE (159) p. 258. +*S. pantanellii*, vide *Euspatangus minutus*. +*S. purpureus*; AIRAGHI (4) p. 74: microstructure of spine; HESSE (159) p. 259. *S. raschi*; CHUN (63) p. 158.
- Sperosoma* sp.; CHUN (63) p. 495. *S. grimaldii*; RICHARD (282) p. 79, fig. 27.
- Sphaerechinae* nov. sub-tribe of *Polyporinae*; LAMBERT (187) p. 54.
- Sphaerechinus*; GREGORY in BATHER (19) p. 313: key to French spp.; ACLOQUE (1) p. 464. *S. granularis*, see II, v, viii; HERBST (156), VERNON (337, 338), & WINKLER (358): +AIRAGHI (4) p. 70: ♂; VIGUIER

- (343): galvanotaxis of larva; CARLGREN (56) p. 473: host of Copepod, and of a Lichomolgid; GIESBRECHT (129) p. 201: microstructure of spine; HESSE (159) p. 243.
- +*Stegaster*; GREGORY in BATHER (19) p. 321. *S. facti*, microstructure of spine; HESSE (159) p. 259: vide etiam sub *Cardiaster maximus*. *S. subtrigonatus* Catullo, olim *Nucleolithes*, incl. *N. cordiformis* Catullo, and *Stegaster*, vel *Holaster*, vel *Cardiaster*, vel *Scagliaster italicus* Ag. sp.; SCHLUETER (299) p. 376.
- +*Stenonia*; GREGORY in BATHER (19) p. 321. *S. tuberculata*, redescr., compared with *Echinocorys vulgaris*, *E. sulcatus*, and *Jeronia pyrenaica*; SIMIONESCU (306) p. 35, pl. iii.
- +*Stephanopsis*, n. g. with genotype *Orthopsis similis* (q. v.); LAMBERT (187) p. 29.
- Sterechinus antarcticus*, n. g. et sp. of *Echinidae*, 'Belgica' expedition; KOEHLER (180) p. 815.
- Stereocidarinae*, n. sub-fam. of *Cidaridae*, further divided into tribes *Rhabdo-* and *Lio-cidarinae*; LAMBERT (187) p. 53.
- Stereocidaris*; GREGORY in BATHER (19) p. 302, fig. xvii. *S. sp.* nondescr. (p. 158), *S.*, sp. nondescr., 470 metres, S. Nias Channel, L. DOEDERLEIN photo but no description (p. 363); CHUN (63). +*S. cretosa*, vide *Cidaris (Stereocidaris) subvesiculosa*. +*S. malum*; KILIAN & LORY (170) pp. 53, 56.
- Stereodermata* Keeping 1875, preferred to *Stereosomata* Duncan 1889, rejected (see general paragraph supra); LAMBERT (187) p. 53.
- Sternata*, Subord. of *Atelostomata*, diagnosis, divided into famm. *Collyritidae*, *Echinocorythidae*, *Spatangidae*, *Palaeostomidae*, *Pourtalesiidae*; GREGORY in BATHER (19) p. 321.
- +*Sternotaxis*, s. g. of *Holaster*; loc. cit.
- +*Stigmatopygus* d'Orb.; loc. cit.: syn. of *Cyrtoma* McClelland 1840; ORTMANN (255) p. 369.
- +*Stirechinus*; GREGORY in BATHER (19) p. 313.
- +*Stomechinus*; op. cit. p. 309. *S. bigranularis* from Vesulian; LAMBERT (186) p. 488; BENOIST (31) p. 4. *S. camarensis*; CHOFFAT (62) p. 184. *S. denudatus*; KILIAN & LORY (170) p. 56. *S. michelini*; BENOIST (31) p. 4; LAMBERT (186) p. 488. *S. serratus*; BENOIST (31) p. 4: compared with *S. perlatus*; LAMBERT (186) p. 488.
- Stomopneustes*; GREGORY in BATHER (19) p. 313.
- +*Stomoporus*; op. cit. p. 323.
- Streptocidarinae*, n. sub-fam. of *Cidaridae*; LAMBERT (187) p. 53.
- Strongylocentrotidae*, diagnosis; GREGORY in BATHER (19) p. 313.
- Strongylocentrotus*; loc. cit. *S. sp.* nondescr.; CHUN (63) p. 158. *S. albus*, literature; MEISSNER (229) p. 8: microstructure of spine; HESSE (159) pp. 242, 245. *S. armiger*, ditto; HESSE (159) pp. 238, 245, pl. xii. *S. bullatus*, measurements of 1 specimen; MEISSNER (229) p. 9. *S. droebachiensis*; DOEDERLEIN (93) p. 196; HARTLAUB (153) pp. 172, 180, 185, 186; NORDGAARD (245) p. 8: +KNIPOVICH (176): +REKSTAD (280): microstructure of spine; HESSE (159) p. 243: food for foxes; LUCAS (208) p. 126. *S. franciscanus*, artificial parthenogenesis; LOEB (201). *S. gibbosus*, literature; MEISSNER (229) p. 9. *S. lividus*, see II, F, viii; VERNON (337, 338): +SCALIA (295) p. 9: in crowds but not boring; BEAUMONT (24) pp. 755, 756: galvanotaxis of larva; CARLGREN (56) p. 470: host of Copepod; GIESBRECHT (129) p. 201: microstructure of spine; HESSE (159) pp. 240, 243, pl. xii: parthenogenesis; VIGUIER (343). *S. purpuratus*, artificial parthenogenesis; LOEB (201): microstructure of spine; HESSE (159) p. 243. *S. tuberculatus*, ditto; HESSE (159) pp. 240, 245.
- Studeria*; GREGORY in BATHER (19) p. 321.
- +*Tasophyma lyonsi*, vide sub *Psammechinus*.

- Temnechininae*, nov. sub-tribe of *Orthoporinae*; LAMBERT (187) p. 54.  
*Temnechinus*; GREGORY in BATHER (19) p. 312.  
 †*Temnocidaris*; op. cit. p. 302. *T. danica*; GRÖNWALL (143) p. 71.  
*Temnopleuridae*, diagnosis, divided into subfam. *Glyphocyphinae*,  
*Ortholophinae*, *Temnopleurinae*; GREGORY in BATHER (19) p. 312.  
*Temnopleurinae*, diagnosis; loc. cit.  
*Temnopleurus*; GREGORY in BATHER (19) p. 312, fig. xxxii. *T. reynaudi*  
 (p. 281), *T. toreumaticus*, habitat, distrib., colour variation, measure-  
 ments of different sized specimens (p. 280); BEDFORD (25).  
*Tetracidarinae*, n. sub-fam. of *Cidaridae*; LAMBERT (187) p. 53.  
 †*Tetracidaris*; GREGORY in BATHER (19) p. 303: not an *Archaeocidarid*  
 but a *Cidarid*; LAMBERT (187) p. 53.  
*Tetraplacida*, rejected (see general paragraph, supra); loc. cit.  
*Thegaster*; GREGORY in BATHER (19) p. 317.  
 †*Tholaster*; GREGORY in BATHER (19) p. 321.  
 †*Thylechinus*; GREGORY in BATHER (19) p. 310.  
*Tiarechinidae*, diagnosis; GREGORY in BATHER (19) p. 305.  
 †*Tiarechinus*, discussed; loc. cit. and fig. xviii.  
 †*Tiaridia*, distinguished from *Eodiadema*; LAMBERT (187) p. 35.  
*Tiarinae*, n. sub-fam. of *Diademataidae*, with tribes *Hemicidarinae*,  
*Eodiademinae*, *Pseudosaleninae*, *Pseudodiademinae*, *Diplopodinae* and  
*Glyphocyphinae*; LAMBERT (187) p. 53.  
 †*Tiaris* Quenst., maintained as sub-genus of *Gymnocidaris*, with genotype  
*Hemicidaris quenstedtii* Merian; comprises also *T. scolopendra* and all  
 claviform spines wrongly attributed to *Hemicidaris crenularis*;  
 LAMBERT (186) p. 483.  
 †*Tiaromma carthusianum*; KILIAN & LORY (170) p. 56.  
 †*Toxaster*; GREGORY in BATHER (19) p. 322. *T. broncoensis*; CHOFFAT  
 (62) p. 185. *T. collegnoi*; KILIAN & LORY (170) pp. 56, 57: a topo-  
 type of *Echinospatagus leymeriei* Cott., which is a local var. only,  
 differences from type noted; LORIOL (207) p. 58, pl. vi. *T. compla-*  
*natus*; BAUMBERGER & MOULIN (23) p. 159: DOUXAMI (95) p. 419:  
 LEBEDEV (192) p. 15: (= *retusus*); FOBLER (329) p. 145. *T. cor-*  
*vensis*; CHOFFAT (62) p. 185. *T. gibbus*; RIAZ (281) p. 766. *T.*  
*granosus*; BAUMBERGER & MOULIN (23) pp. 171, 200. *T. radula*;  
 FICHEUR (108) p. 565. *T. retusus*; KILIAN & LORY (170) p. 48:  
 Lam., name restored in place of *Echinospatagus cordiformis*, Barre-  
 mian of La Turbie; RIAZ (281) p. 766: vide etiam *T. complanatus*.  
*T. sabugensis*; CHOFFAT (62) p. 185. *T. viliei*; FICHEUR (108) p. 573.  
 †*Toxobrius lonigensis*; OPPENHEIM (251) p. 112.  
*Toxopneustes*; GREGORY in BATHER (19) p. 313: key to French spp.;  
 ACLOQUE (1) p. 464. *T. droebachiensis* and *T. lividus*, vide sub  
*Strongylocentrotus*. *T. pileolus*, microstructure of spine; HESSE (159)  
 p. 244. *T. praecursor*, n. sp., Lower Miocene of San Julian and Shell  
 Gap (Upper Rio Chico), S. Patagonia; ORTMANN (255) p. 369. *T.*  
*variegatus*; CONANT (71): DUERDEN (100) p. 613 and (101) p. 620:  
 microstructure of spine; HESSE (159) p. 244: breeding period;  
 WILSON (355) p. 351.  
 †*Trachyaster archiaci*; FOURTAU (116) p. 481.  
 †*Trematopygus*; GREGORY in BATHER (19) p. 320.  
 †*Triadocidaris*, relations to *Eotiaris* (p. 40), *T. liagora*, restr., vide *Eoci-*  
*daris laubei* (p. 39); LAMBERT (187).  
*Trigonocidaris*; GREGORY in BATHER (19) p. 312. *T.*, sp.; ANDERSON  
 (11) p. 5.  
*Triplacida*, rejected (see general paragraph supra); LAMBERT (187) p. 53.  
 †*Triplacida*; GREGORY in BATHER (19) p. 310.  
*Triplechinae* A. Ag. = *Triplechinidae* A. Ag., reduced to sub-tribe of  
*Oligoporinae*; LAMBERT (187) p. 54.

- Triplechinidae*, diagnosis; GREGORY in BATHER (19) p. 313.  
*Tripneustes*, incl. *Hipponos*; GREGORY in BATHER (19) p. 313.  
*Tripylus excavatus*, literature; MEISSNER (229) p. 14.  
*Trochalosominae* Bather [sic! i.e. nom. mut. pro *Leiosominae*, q.v. in Zool. Rec. 1897], a sub-tribe of *Polyporinae*; LAMBERT (187) p. 55.  
†*Trochodiadema*, n. g. of *Diadematiidae* allied to *Pseudodiadema* (v. 70), with genotype *T. abramense*, n. sp., Turonian, Portugal, type at Direct. trav. geol. Lisbon; LORIOI (207) p. 71, pl. vii. *T. abramense* and *T. ouremense*; CHOFFAT (62) p. 166, 193.  
†*Tuberaster*; GREGORY in BATHER (19) p. 323.  
*Tylocidaris*; GREGORY in BATHER (19) p. 302. +*T.*, cf. *sorigneti*; KILIAN & LORY (170) p. 60.  
*Typocidaris*; GREGORY in BATHER (19) p. 302.  
*Urechinus*; GREGORY in BATHER (19) p. 321.  
†*Vologesia*; GREGORY in BATHER (19) p. 321.  
†*Xenocidaris*; GREGORY in BATHER (19) p. 302. *X. clavigera*, micro-structure of spine; HESSE (159) p. 212.  
†*Zeuglopleurus*; GREGORY in BATHER (19) p. 312, fig. xxxi. *Z. rowei*, n. sp., Senonian of Kent, descr. in 1889 as young *Z. costulatus*, cotypes in Brit. Mus. and Rowe coll., *Z. costulatus* as restr. known only from Chalk Marl, Sussex; GREGORY (137): as zonal fossil; ROWE (288) p. 300.

## (D).—ASTEROIDEA.

*Asteroidea*, as sub-class of *Stelleroidea* (vide IV, A), general account of structure, diagnosis, rejection of the Orders *Palaeasteroidea* and *Euasteroidea*, criticism of Stuert's previous classifications of Palaeozoic *Ast.*, and arrangement of all in Sladen's two Orders, *Phanerozonia* and *Cryptozonia* (qq.v. infra) rediagnosed in extended sense; GREGORY in BATHER (19) p. 239 et sqq. Bases of classification of Palaeozoic *Ast.*, arranged under the headings *Encrinasteriae-Phanerozonia*, *Encrinasteriae-Cryptozonia*, *Eustelleridae-Phanerozonia*, and *Eustelleridae-Cryptozonia*; STUERTZ (325) pp. 206-210.

- Acantharchaster*; GREGORY in BATHER (19) p. 251.  
*Acanthaster*; op. cit. p. 258.  
*Acanthasterinae*, diagnosis; loc. cit.  
*Amphiaster*; GREGORY in BATHER (19) p. 254.  
*Anasterias*; op. cit. p. 258.  
*Anthenea*; op. cit. p. 253. *A. flavescens*; BEDFORD (25) p. 295.  
*Antheneidae*, diagnosis; GREGORY in BATHER (19) p. 253.  
*Anthenoides*; loc. cit.  
*Aphroditaster*; GREGORY in BATHER (19) p. 251.  
*Archaster*; loc. cit. *Archaster* [sic], sp., original photograph; DAVENPORT (80) fig. 183. *A. typicus*, habitat, distrib., variations, anus central, measurements; BEDFORD (25) p. 289.  
†*Archasterias*; GREGORY in BATHER (19) p. 250.  
*Archasteridae*, diagnosis, divided into sub-famm. *Pararchasterinae*, *Plutonasterinae*, *Pseudarchasterinae*, *Archasterinae*; op. cit. p. 251.  
*Archasterinae*, diagnosis; loc. cit.  
†*Argaster*; GREGORY in BATHER (19) p. 250.  
*Arthraster*; op. cit. p. 255.  
†*Aspidosoma*, *A. petaloides* accepted as provisional genotype; op. cit. p. 250.  
†*Aspidosomatidae*, diagnosis; loc. cit.  
*Asteracanthion*, vide *Asterias*.

- Asteracanthium distichum* Brandt, from White Sea is *Asterias rubens*; LUDWIG (210) p. 488.
- Asterias* [incl. *Asteracanthion*]; GREGORY in BATHER (19) p. 258: (sub *Asteracanthion*) key to French spp.; ACLOQUE (1) p. 458: key to Arctic spp.; DOEDERLEIN (93) p. 197: key to Belgian spp.; LAMEERE (188) p. 34. *A. sp.*, Bouvet Id.; CHUN (63) p. 492. *A. alboverrucosa* Brandt, is not *Crossaster papposus* but *Solaster endeca*; LUDWIG (210) p. 464. †*A. antiqua*, discussed (vide *Hiseringaster*); STUERTZ (325) p. 216. *A. camtschatica*, incl. *A. acervata*, geogr. and bathymetric distrib., habitat (p. 485), *A. cribraria*, distrib. (p. 482); LUDWIG (210). †*A. dubium*, Wyoming; LOGAN (205) p. 130, pl. xxv. *A. endeca* var. *decemradiata* Brandt = *Crossaster vancouverensis* de Lor.; LUDWIG (210) p. 466. *A. forbesi*, artificial parthenogenesis; LOEB (202): growth and food supply; MEAD (228). *A. glacialis*; ALLEN & TODD (7) p. 187: LUDWIG (210) p. 480: NORDGAARD (245) p. 8: galvanotaxis of larva; CARLOREN (56) p. 475: no galvanotaxis in adult; NAGEL (239) p. 337. *A. groenlandica*, redescr., measurements, probably incl. *A. spitzbergensis* and *A. disticha*, figures of thick- and thin-spined examples; DOEDERLEIN (93) p. 202, pls. iv, v, ix: geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 482. *A. hyperborea*, redescr., measurements, one young, perhaps = *A. muelleri* var. *stoccosa*; DOEDERLEIN (93) p. 198, pls. iv, v: incl. *A. normani* as young, measurements, now first found at Spitzbergen; LUDWIG (210) p. 484. †*A. impressae*; HUENE (166) p. 351. †*A. jurensis*; loc. cit.: KOPY (177) p. 200. *A. lincki* (incl. *A. stellionura* and *A. gunneri*), redescr., measurements, variations; DOEDERLEIN (93) p. 200, pl. iv: geogr. and bathymetric distrib., habitat, colour in life; LUDWIG (210) p. 486. *A. muelleri*, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 481. *A. panopla*; KNIPOVICH (175) p. 452: redescr., measurements; DOEDERLEIN (93) p. 204, pls. iv, v: geogr. and bathymetric distrib., habitat, colour in life; LUDWIG (210) p. 486. *A. polaris*, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 485. *A. rubens*; ALLEN & TODD (7) p. 187: LAMEERE (189) p. 21: NORDGAARD (245) p. 8: see II, F, viii; GIARD (127) & (128) p. 763: see II, C, iii; QUINTON (275): copper; DUBOIS (99): host of Copepod; GIESBRECHT (129) p. 201: pseudohaemal and water-vascular systems and axial organ; BATHER (19) p. 25, fig. xxi: described as typical of *Ast.* structure; GREGORY in BATHER (19) p. 241 et sqq., figg. i-iv: young, with regular rows of spines and two regenerating arms; DOEDERLEIN (93) p. 198, pl. ix: incl. *Asteracanthium distichum* Brandt, geogr. and bathymetric distrib.; LUDWIG (210) p. 488. *A. spitzbergensis*; LUDWIG (210) p. 484. *A. stellionura*; KNIPOVICH (175) p. 452: NORDGAARD (246) p. 24. *A. tenuispina*, multiple madreporites; WAITE (345). *A. vulgaris* as typical Echinoderm, habits, development, and structure, popular; DAVENPORT (80) p. 192: regeneration; KING (171).
- Asteriidae*, diagnosis; GREGORY in BATHER (19) p. 258.
- Asterina* [vide etiam *Asteriscus*]; op. cit. p. 254. *A. sp.*; BEDFORD (25) p. 298. *A. gibbosa*, ontogeny; BATHER (19) p. 13, figg. vi, xii: larval organogeny; MACBRIDE (214). *A. regularis*; BENHAM (30).
- Asterinidae*, difficulty of classifying in either *Crypto-* or *Phanero-zonia*, relations to fossil forms; STUERTZ (325) p. 210: diagnosis, divided into sub-fam. *Gunerinae*, *Asterininae*, and *Palmipedinae*; GREGORY in BATHER (19) p. 254.
- Asterininae*, diagnosis; loc. cit.
- Asteriscus*, key to French spp.; ACLOQUE (1) p. 460.
- Asterodiscus*; GREGORY in BATHER (19) p. 254.
- Asterodon*; op. cit. p. 253.
- Asteropsis*; op. cit. p. 254.

- Astrella*; GREGORY in BATHER (19) p. 252.  
*Astrogonium*; op. cit. p. 253: key to French spp.; ACLOQUE (1) p. 460.  
*A. abnormale*; BENHAM (30).  
*Astropecten*; GREGORY in BATHER (19) p. 252, fig. vii: key to French spp.; ACLOQUE (1) p. 460: key to Belgian spp.; LAMEERE (188) p. 34. *A. irregularis*, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 453. *A. javanicus*, n. var. *malaccanus*, intermediate between *A. javanicus* and *A. andersoni*, Malacca, 2 fms., polian vesicles (p. 291), *A. pleiacanthus*, n. sp., 1-3 fms., Singapore, allied to *A. aurantiacus* (p. 292, pl. xxiv); BEDFORD (25).  
*Astropectinidae*, diagnosis, divided into sub-famm. *Astropectininae* and *Luidiinae*; GREGORY in BATHER (19) p. 252.  
*Astropectininae*, diagnosis; loc. cit.  
*Bathyiaster*; loc. cit. *B. sp.*, Bouvet Id.; CHUN (63) p. 492. *B. pallidus*, geogr. and bathymetric distrib.; LUDWIG (210) p. 455.  
†*Bdellacoma*, removed from *Palaeocomidae*; GREGORY in BATHER (19) p. 254.  
*Benthaster*; op. cit. p. 257.  
*Benthopecten*; op. cit. p. 251.  
*Blakiaaster*, in *Archasteridae* (p. 251), incl. *Leptoptychaster*, and placed in *Astropectininae* (p. 252); GREGORY in BATHER (19).  
*Brisinga*; op. cit. p. 259, fig. v. *B. sp.*, Bouvet Id. (p. 492), Nias Channel (p. 362); CHUN (63). *B. coronata*; LUDWIG (210) p. 488.  
*Brisingaster*; GREGORY in BATHER (19) p. 259.  
*Brisingidae*, diagnosis, systematic position discussed; op. cit. p. 258.  
†*Calliaaster*; op. cit. pp. 253, 259.  
*Calliderma*; op. cit. p. 253. †*C. latum*; DIBLEY (92) p. 493.  
*Calvasterias*; GREGORY in BATHER (19) p. 258.  
*Calycaaster*; op. cit. p. 255.  
*Calyptaster*; op. cit. p. 257.  
*Caulaster*; op. cit. p. 251.  
*Chaetaster*; op. cit. p. 255: key to French spp.; ACLOQUE (1) p. 459.  
*Chaetasterinae*, diagnosis; GREGORY in BATHER (19) p. 255.  
*Cheiraster*; op. cit. p. 251.  
†*Cheiroplaster*; op. cit. p. 257.  
†*Cheiroptasterinae*, diagnosis; op. cit. p. 256.  
*Chitonaster*; GREGORY in BATHER (19) p. 253.  
*Choriaster*; op. cit. p. 254.  
*Cnemidiaster*; op. cit. p. 255.  
†*Coelaster*; GREGORY in BATHER (19) p. 259.  
*Coelasterias*; op. cit. p. 255.  
*Colpaster*; op. cit. p. 259.  
†*Compaster*, discussed; op. cit. p. 255.  
*Comptonia*; GREGORY in BATHER (19) p. 253.  
*Coronaster*; op. cit. p. 258.  
*Coscinasterias*; op. cit. p. 258.  
*Cosmasterias*; loc. cit.  
*Craspidaster*; op. cit. p. 252. *C. glauconotus*, n. sp., 1-3 fms., Malacca; BEDFORD (25) p. 290, pl. xxiv.  
*Crenaster* Perrier; GREGORY in BATHER (19) p. 251. †*C. cf. laevis*, marginals only; OPPENHEIM (251) p. 79, pl. xi. †*C. prisca*; GREPPIN (138) p. 192.  
*Cribrella sanguinolenta*; DOEDERLEIN (93) p. 212: geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 472.  
†*Cribrellites*; GREGORY in BATHER (19) p. 259.  
*Crossaster*; op. cit. p. 256: key to Belgian spp.; LAMEERE (186) p. 34. *C. papposus*, incl. *C. affinis*, geogr. and bathymetric distrib., habitat, number of arms; LUDWIG (210) p. 460.

- Cryptaster*; GREGORY in BATHER (19) p. 257.
- Cryptozonia*, Order, diagnosis, extended to Palaeozoic *Ast.*, divided into families, *Palaeocomidae*, *Lepidasteridae*, *Tropidasteridae*, *Linckiidae*, *Stichasteridae*, *Solasteridae*, *Korethrasteridae*, *Pterasteridae*, *Palasteriscidae*, *Echinasteridae*, *Heliasteridae*, *Pedicellasteridae*, *Asteriidae*, and *Brisingidae*; op. cit. p. 254 et sqq.: see also STUERTZ (325) general paragraph, supra.
- Ctenaster*; GREGORY in BATHER (19) p. 256.
- Ctenodiscinae*, diagnosis, cribriform organs; op. cit. p. 251.
- Ctenodiscus*, loc. cit. *C. crispatus*, N. Atlantic and N. Pacific, including *C. krausei* from Behring Sea, Ludwig having been misled by faulty description of Duncan and Sladen, measurements; DOEDERLEIN (93) p. 221, pl. ix: incl. *C. krausei*, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 450.
- Culcita*; GREGORY in BATHER (19) p. 254, fig. vi. *C. sp.*, Diego Garcia; CHUN (63) p. 415. *C. novae guineae*, var. *arenosa*, variation of shape with mode of preserving; BEDFORD (25) p. 296.
- +*Cupulaster*; GREGORY in BATHER (19) p. 259.
- Cycethra*; op. cit. p. 254.
- Dermasterias*; loc. cit.
- Dictyaster*; GREGORY in BATHER (19) p. 258.
- Diplasterias*; loc. cit.
- Dipsacaster*; op. cit. p. 252. *D. sladeni*; CHUN (63) p. 491.
- Disasterina*; GREGORY in BATHER (19) p. 254.
- Dytaster*; op. cit. p. 251. *D. agassizi* Perr. nom. nud. 4900 metres, off C. Finisterre; RICHARD (282) p. 76.
- Dorigona*, incl. *Nymphaster*; GREGORY in BATHER (19) p. 253.
- Echinaster*; op. cit. p. 258: key to French spp.; ACLOQUE (1) p. 459. *E. roseus*, no galvanotaxis in adult; NAGEL (239) p. 337. *E. sanguinolentus*, host of Copepod; GIESBRECHT (129) p. 201. *E. scrobiculatus*, distrib.; LUDWIG (210) p. 476.
- +*Echinasterella*; GREGORY in BATHER (19) p. 257.
- +*Echinasterias*, n. g., with genotype *E. spinosus*, n. sp., Lower Devon., Bundenbach, referred to *Eustelleridae-Cryptozonia*; STUERTZ (325) p. 230.
- Echinasteridae*, diagnosis, divided into sub-famm. *Acanthasterinae*, *Mithrodiinae*, *Echinasterinae*, and *Valvasterinae*; GREGORY in BATHER (19) p. 257.
- Echinasterinae*, diagnosis; op. cit. p. 258.
- +*Echinodiscus*, n. g. (p. 231) [nom. preocc. Agassiz et Worthen], with genotype *E. multidactylus*, n. sp., Lower Devon., Bundenbach, referred to *Eustelleridae-Cryptozonia*; STUERTZ (325) p. 232, pl. iii.
- +*Echinostella*, n. g. (p. 233) with genotype *E. traquairi*, n. sp., Lower Devon., Bundenbach, referred to *Palae-Eustelleridae-Cryptozonia-Echinasteridae*; op. cit. p. 234, pls. iii, iv.
- Encrinasteridae*; STUERTZ (325), see general paragraph, supra.
- Euaisteroidea*, rejected as systematic conception; GREGORY in BATHER (19) p. 249.
- Eustelleridae*; STUERTZ (325), see general paragraph, supra.
- Ferdina*; GREGORY in BATHER (19) p. 255.
- Flexaster*; op. cit. p. 257.
- Freyella*; op. cit. p. 259. *F. edwardsi* Perr. nom. nud., 4020 metres between Portugal and Azores; RICHARD (282) p. 76.
- Fromia*; GREGORY in BATHER (19) p. 255.
- Ganeria*; op. cit. p. 254.
- Ganeriinae*, diagnosis; loc. cit.
- Gastraster*; GREGORY in BATHER (19) p. 258.
- Gnathaster*, vide *Odontaster*. *G. (?)*, sp. ~~nondum~~ *Agnihan* (p. 491), *G.*, sp., Bouvet Id. (p. 492); *Cfr*



- Goniaster*; GREGORY in BATHER (19) p. 253. †*G. mammillatus*; CLARK (66) p. 339. †*G. quinqueloba*; DEECKE (82) p. 71.
- Goniodiscinae*, diagnosis; GREGORY in BATHER (19) p. 253.
- Goniodiscus*; loc. cit. *G. articulatus*, incl. *Pentaceros granulatus* Gray; BEDFORD (25) p. 294.
- Goniodon*; GREGORY in BATHER (19) p. 253.
- Goniopecten*; op. cit. p. 251.
- Gymnasteria*; op. cit. p. 254.
- Gymnasteriidae*, diagnosis; loc. cit.
- Gymnobrisinga*; GREGORY in BATHER (19) p. 259.
- †*Helianthaster*, redescri. and referred to *Heliasteridae*; op. cit. p. 258.
- †*Helianthasterinae*, diagnosis; loc. cit.
- Heliaster*; loc. cit. *H. cumingi*, multiplication of rays compared with *Pycnopodia*; RITTER & CROCKER (283) p. 249.
- Heliasteridae*, diagnosis, divided into sub-famun. *Helianthasterinae*, *Heliasterinae*; GREGORY in BATHER (19) p. 258.
- Heliasterinae*, diagnosis; loc. cit.
- Henricia*, incl. *Cribrella*; loc. cit. *H. oculata*, syn. of *Cribrella sanguinolenta*, q.v.; LUDWIG (210).
- Hexaster*, not valid; DOEDERLEIN (93) p. 217. *H. obscurus*; RICHARD (282) p. 76, figg. 24, 25: is *Pteraster*; DOEDERLEIN (93) p. 217: incl. *P. hexactis*, distrib.; LUDWIG (210) p. 468.
- Hippasterias*; GREGORY in BATHER (19) p. 253, fig. ix. *H. phrygiana*; DOEDERLEIN (93) p. 218: HARTLAUB (153) p. 191: geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 457.
- †*Hisingeraster*, n. g. with genotype *Asterias antiqua* [preocc. *Lindstromaster*] referred to *Phanerozonia*; STUERTZ (325) pp. 216, 225.
- Hoplaster*; GREGORY in BATHER (19) p. 253.
- †*Hudsonaster*, n. g. with genotype *Palasterina rugosa*; STUERTZ (325) p. 225.
- Hydrasterias*; GREGORY in BATHER (19) p. 258.
- Hymenaster*; op. cit. p. 257, fig. xii. *H. giboryi* Perr. nom. nud., 4261 metres, near Azores; RICHARD (282) p. 77. *H. pellucidus*; DOEDERLEIN (93) p. 218: KNIPOVICH (175) p. 458; geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 472.
- Hymenodiscus*; GREGORY in BATHER (19) p. 259.
- Hypalaster*; op. cit. p. 251. *H. valdiviae* n. sp., 4990 metres, Gulf of Guinea, distinguished from *H. parfaiti* and figd.; LUDWIG in CHUN (63) p. 490.
- Iconaster*; GREGORY in BATHER (19) p. 253. *I. longimanus*, Malacca; BEDFORD (25) p. 293.
- Ilyaster mirabilis*, distrib.; LUDWIG (210) p. 456.
- Isaster*; GREGORY in BATHER (19) p. 251.
- †*Jaekelaster* n. g., with genotype *J. petaliformis* n. sp., Lower Devon., Bundenbach, referred to *Eustelleridae-Cryptozonia*; STUERTZ (325) p. 235, pl. iv.
- Korethraster*; GREGORY in BATHER (19) p. 256. *K. hispidus*, distrib.; LUDWIG (210) p. 468.
- Korethrasteridae*, diagnosis; GREGORY in BATHER (19) p. 256.
- Labidiaster*; op. cit. p. 259. *L. radiosus*, multiplication of rays compared with *Pycnopodia*; RITTER & CROCKER (283) p. 248.
- Lasiaster*; GREGORY in BATHER (19) p. 254. *L. hispidus*, possibly incl. *L. villosus* Sladen, geogr. and bathymetric distrib.; LUDWIG (210) p. 460.
- Lebrunaster*; GREGORY in BATHER (19) p. 254.
- Leiaster*; op. cit. p. 255.
- †*Lepidaster*; loc. cit. & fig. x.
- †*Lepidasteridae*, diagnosis; loc. cit.

- Leptaster*; GREGORY in BATHER (19) p. 253.  
*Leptasterias*; op. cit. p. 258.  
*Leptogonaster*, referred to *Goniodiscinae*; op. cit. p. 253.  
*Leptoptychaster arcticus*; DOEDERDEIN (93) p. 224: geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 452.  
*Linckia*; GREGORY in BATHER (19) p. 255. *L. sp.* regeneration; HORST (161) & HUBRECHT (165). *L. diplax* and *L. miliaris*; ANDREWS (13) p. 116.  
*Linckiidae*, diagnosis, divided into sub-famm. *Roemerasterinae*, *Linckiinae*, *Chaetasterinae*, *Metrodirinae*; GREGORY in BATHER (19) p. 255.  
*Linckiinae*, diagnosis; loc. cit.  
*Lonchotaster*; GREGORY in BATHER (19) p. 251.  
*Lophaster*; GREGORY in BATHER (19) p. 256. *L. furcifer*; KNIPOVICH (175) p. 458: geogr. and bathymetric distrib., habitat, large specimen (R=125 mm.) from Spitzbergen, colour in life; LUDWIG (210) p. 467.  
† *Loriolaster*; GREGORY in BATHER (19) p. 257.  
*Luidia*; op. cit. p. 252. *L. sp.* (*Bipinnaria asterigera*); BROWNE (49) p. 685. *L. sp.* Bouvet Id.; CHUN (63) p. 492. *L. clathrata*?; DUERDEN (100) p. 613. *L. longispina* (p. 292), *L. maculata*, (p. 293), *L. penangensis*, food, differences from type (p. 292); BEDFORD (25).  
*Luidiaster*; GREGORY in BATHER (19) p. 251.  
*Luidiinae*, diagnosis; op. cit. p. 252.  
*Lytaster*; op. cit. p. 258.  
*Mammaster*; op. cit. p. 255.  
*Marginaster*; GREGORY in BATHER (19) p. 254.  
*Marsipaster*; op. cit. 257.  
*Mayraster*; loc. cit.  
*Mediaster*; op. cit. p. 253. *M. stellatus*; RICHARD (282) p. 76, fig. 26.  
† *Medusaster*; GREGORY in BATHER (19) p. 259.  
*Metopaster*; op. cit. p. 253. *M. mantelli* and *M. parkinsoni*; DIBLEY (92) p. 493.  
*Metrodira*; GREGORY in BATHER (19) p. 255.  
*Metrodirinae*; loc. cit.  
*Mimaster*; GREGORY in BATHER (19) p. 253.  
*Mimasterinae*, diagnosis; loc. cit.  
*Mitelephaster*; loc. cit.  
*Mithrodia*; GREGORY in BATHER (19) p. 258.  
*Mithrodinae*, diagnosis; loc. cit.  
*Mitraster*; op. cit. p. 253. *M. hunteri* and *M. rugatus*?; DIBLEY (92) p. 493.  
† *Monaster*; GREGORY in BATHER (19) p. 250.  
*Moriaster*; op. cit. p. 252.  
*Myxaster*; op. cit. p. 257.  
*Narcissia*; op. cit. p. 255.  
*Nardoa*; loc. cit. *N. tuberculata*; ANDREWS (13) p. 116.  
*Nectria*; GREGORY in BATHER (19) p. 253.  
*Neomorphaster*; op. cit. p. 255.  
*Nepanthia*; op. cit. p. 254.  
*Nidorellia*; loc. cit.  
*Nymphaster*, vide *Dorigona*. *N. alcocki*, n. sp., 1469 metres, G. of Aden, figured but not described; LUDWIG in CHUN (63) p. 493. *N. coombii*?; DIBLEY (92) p. 493.  
*Odinia*; GREGORY in BATHER (19) p. 259.  
*Odontaster*; incl. *Gnathaster*; op. cit. p. 253.  
*Ogmaster*; loc. cit.  
*Ophidiaster*; op. cit. p. 255: key to French spp.; ACLOQUE (1) p. 459.  
*O. ludwigi*, n. sp., from Peru, allied to *O. agassini*, coll. de Loriol; LORIOLO (207) p. 78, pl. viii.

*Oreaster*, vide *Pentaceros*.

†*Palaeaster*; GREGORY in BATHER (19) p. 250.

†*Palaeasteridae*, diagnosis, divided into sub-famm. *Palaeasterinae* *Xenasterinae*; loc. cit.

†*Palaeasterina* [vide etiam *Palasterina*]; loc. cit.

†*Palaeasterinae*, sub-fam. of *Palaeasteridae*, diagnosis (does not inc. *Palaeasterina*); loc. cit.

†*Palaeasterinidae*, diagnosis; loc. cit.

†*Palaeasteroidea*, rejected as systematic conception; op. cit. p. 249.

†*Palaeocoma*; GREGORY in BATHER (19) p. 254.

†*Palaeocomidae*, diagnosis; loc. cit.

†*Palaeoneotria*; op. cit. p. 250.

†*Palaeostella*; loc. cit.

†*Palaeosolaster* n. g. (p. 226), with genotype, *P. gregoryi*, n. sp., L. Devon., Bundenbach, referred to *Encrinasteriae-Cryptosonia*; STU. (325) p. 227, pl. ii.

†*Palasterina* discussed and diagnosed (pp. 213, 214); *P. follmanni*, cussed (p. 218) [vide etiam *Pseudopalasterina*]; *P. obtusa*, prob. *Urasterella* (p. 216); *P. primaeva*, perhaps belongs to *Cryptos* (p. 224); *P. rugosa*, discussed (p. 218); *P. stellata*, discussed (p. 218); STUERTZ (325).

†*Palasteriscidae*, diagnosis, position of madreporite discussed; GREG. in BATHER (19) p. 257.

†*Palasteriscus*; loc. cit.

*Palmispedinae*, diagnosis; op. cit. p. 254.

*Palmipes*; loc. cit.: key to French spp.; ACLOQUE (1) p. 459; L. Belgian spp.; LAMERE (188) p. 34. *P. rosaceus*; BEDFORD p. 297.

*Paragonaster*; GREGORY in BATHER (19) p. 253. *P. subtilis* PERR. nud., 4020 metres, betw. Portugal and Azores; RICHARD (282) p. 251.

*Pararchaster*; GREGORY in BATHER (19) p. 251.

*Pararchasterinae*, diagnosis; loc. cit.

*Patiria*; op. cit. p. 254. *P.* sp.; BEDFORD (25) p. 298.

*Paulia*; GREGORY in BATHER (19) p. 254.

*Pectinaster*; op. cit. p. 251.

*Pectinidiscus* n. g. of *Porcellanasteridae*, with genotype *P. annae*, n. 463 metres, Zanzibar, figd. but not descr.; LUDWIG in CHUN p. 494.

*Pedicellaster*; GREGORY in BATHER (19) p. 258. *P. typicus*, inc. *palaeocrystallus* Dunc. & Slad., geogr. and bathymetric dis. habitat, now first found at Spitzbergen; LUDWIG (210) p. 476.

*Pedicellasteridae*, diagnosis; GREGORY in BATHER (19) p. 258.

*Pentaceropsis*; op. cit. p. 254.

*Pentaceros*, incl. *Oreaster*; loc. cit. *P. granulatus*, vide *Goniaster articulatus*. *O.* [i. e. *P.*] *obtusus*; DIBLEY (92) p. 493. *P. reticulatus* CONANT (71); DUERDEN (100) p. 613 and (101) p. 620. *P. turanicus* specific characters and their variation, measurements; BEDFORD p. 295.

*Pentacerotidae*, diagnosis; GREGORY in BATHER (19) p. 253.

*Pentagonaster*; loc. cit. *P. abyssalis*, n. sp., 2253 metres, Mald. figured but not described (p. 493). *P. excellens*, n. sp., 628 m Somali coast, figd. but not descr. (p. 494); LUDWIG in CHUN p. 493. *P. granularis*; KNIPOVICH (175) p. 458: geogr. and bathym. distrib., habitat; LUDWIG (210) p. 456. *P. megaloplax*; DIBLEY p. 493.

*Pentagonasteridae*, diagnosis, divided into sub-famm. *Pentagonasteridae* *Goniasteridae*, *Mimasterinae*; GREGORY in BATHER (19) p. 253.

*Pentagonasterinae*; diagnosis; loc. cit.

- Peribolaster*; GREGORY in BATHER (19) p. 256.  
*Perknaster*; op. cit. p. 258.  
*Persephonaster*; op. cit. p. 251.  
†*Petraster*; op. cit. p. 250.  
*Phaneraster*; op. cit. p. 253.  
*Phanerozonia*, Order, diagnosis, extension to Palaeozoic *Ast.*, divided into Families, *Palaeasteridae*, *Palaeasterinidae*, *Aspidosomatidae*, *Taeniasteridae*, *Archasteridae*, *Porcellanasteridae*, *Astropectinidae*, *Pentagonasteridae*, *Antheneidae*, *Pentacerotidae*, *Gymnasteriidae*, *Asterinidae*; GREGORY in BATHER (19) p. 249 et sqq.  
*Pharia*; op. cit. p. 255.  
*Phataria*; loc. cit. *P. unifascialis* from Celebes; LORIOL (207) p. 80.  
*Pholidaster*; GREGORY in BATHER (19) p. 255.  
*Phoxaster*; op. cit. p. 252.  
*Platasterias*; loc. cit.  
*Plectaster*; GREGORY in BATHER (19) p. 258.  
†*Plumaster*; op. cit. p. 259.  
*Plutonaster*; op. cit. p. 251. *P. bifrons* probably not Arctic (p. 450), *P. parelii*, incl. *Pseudarchaster tessellatus* var. *arcticus* Sluiter, geogr. and bathymetric distrib., habitat (p. 449); LUDWIG (210).  
*Plutonasterinae*, diagnosis; GREGORY in BATHER (19) p. 251.  
*Podasterias*; op. cit. p. 258.  
*Polyasterias*; loc. cit.  
*Pontaster*; op. cit. p. 251. *P. sp.* Bouvet Id.; CHUN (63) p. 492. *P. hispidus*, 200 in haul, near Colombo; ANDERSON (11) p. 8. *P. tenuispinus*; DOEDERLEIN (93) p. 223; HARTLAUB (153) p. 191: incl. *P. limbatus*, *P. hebitus*, and *P. marionis*, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 447.  
*Porania*; GREGORY in BATHER (19) p. 254. *P. sp.* Bouvet Id.; CHUN (63) p. 492.  
*Poraniomorpha*; GREGORY in BATHER (19) p. 254. *P. rosea*, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 459.  
*Porcellanaster*; GREGORY in BATHER (19) p. 251, fig. viii.  
*Porcellanasteridae*, diagnosis, divided into sub-famm. *Porcellanasterinae* *Ctenodiscinae*; loc. cit.  
*Porcellanasterinae*, diagnosis; loc. cit.  
*Prognaster*; op. cit. p. 255. *P. grimaldii*; RICHARD (282) p. 75, fig. 23.  
†*Protasteracanthion*; GREGORY in BATHER (19) p. 251.  
*Pseudarchaster*; loc. cit. *P. tessellatus* var. *arcticus* Sluiter, probably = *Plutonaster parelii* var. *longobrachialis* Dan. & Kor.; LUDWIG (210) p. 449.  
*Pseudarchasterinae*, diagnosis; GREGORY in BATHER (19) p. 251.  
*Pseudaster*; loc. cit.  
†*Pseudopalasterina*, n. g. with genotype *Palasterina follmanni* Stuert, which is redescri.; STUERTZ (325) pp. 219, 225.  
*Pailaster*; GREGORY in BATHER (19) p. 252. *P. andromeda*, incl. *P. floris* Verrill, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 454.  
*Pteraster hexactis*, vide *P. et Hexaster obscurus*. *P. militaris*; DOEDERLEIN (93) p. 218: possibly incl. *P. aporus* Ludw., geogr. and bathymetric distrib., habitat, arm forked; LUDWIG (210) p. 469. *P. obscurus*, incl. *P. hexactis*, rediagnosed; measurements compared with *P. pulvillus*, young in brood-chamber, how nourished, adult covered with slime, does not form an independent genus; DOEDERLEIN (93) p. 213, pl. viii. *P. pulvillus*, restricted by removal of *P. obscurus*; op. cit. p. 217, pl. viii: geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 470.  
*Pterasteridae*, diagnosis, divided into sub-famm. *Cheiroptasterinae*, *Pterasterinae*, *Pythonasterinae*; GREGORY in BATHER (19) p. 256.

- Pterasterinae*, diagnosis; GREGORY in BATHER (19) p. 257.  
*Pycnaster*; op. cit. p. 253.  
*Pycnopodia*; op. cit. p. 258. *P. helianthoides*, origin and relations of accessory rays; RITTER & CROCKER (283).  
*Pythonaster*; GREGORY in BATHER (19) p. 257.  
*Pythonasterinae*, diagnosis; loc. cit.  
*Radiaster*; op. cit. p. 254.  
*Remaster*; GREGORY in BATHER (19) 256.  
*Retaster*; op. cit. p. 257. *R. cribrus*, colour, osculum; BEDFORD (25) p. 298. *R. multipes*, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 471.  
*Rhegaster*; GREGORY in BATHER (19) p. 254. *R. tumidus*; KNIPOVICH (175) p. 458: measurements, skeleton of large individual descr., differences from young stages; DOEDERLEIN (93) p. 219, pl. ix: geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 459.  
*Rhipidaster*; GREGORY in BATHER (19) p. 256.  
†*Rhopalocoma*; op. cit. p. 257.  
†*Roemeraster*; op. cit. p. 255.  
†*Roemerasterinae*, diagnosis; loc. cit.  
*Rosaster*; GREGORY in BATHER (19) p. 253.  
†*Salteraster*; op. cit. p. 251.  
†*Schoenaster*; op. cit. p. 250.  
*Sclerasterias*; op. cit. p. 258.  
*Smilasterias*; loc. cit.  
*Solaster*; op. cit. p. 256, fig. xi: key to French spp.; ACLOQUE (1) p. 459. *S. sp.*; SINITZIN (308). *S. sp.* Bouvet Id., figd.; CHUN (63) p. 492. *S. affinis* is only var. of *S. papposus*; DOEDERLEIN (93) p. 209. *S. endeca*, measurements, variations; loc. cit. and pl. vii: incl. *Asterias alboverrucosa* Brandt, *S. syrtensis* Verrill, and probably *S. intermedius* Sluiter, geogr. and bathymetric distrib., habitat; LUDWIG (210) p. 464. *S. furcifer*; DOEDERLEIN (93) p. 212. *S. glacialis*, distrib.; LUDWIG (210) p. 467. *S. papposus*, endoskeleton; STEWART (318) p. 13: measurements, extensive variations, partly local (p. 205, pl. vi); **var. nov. anglica**, English coasts (p. 207, pl. vi); **var. nov. squamata**, N. Atlantic (p. 208, pl. vi); *S. syrtensis*, new to European waters, differences fr. *S. endeca* (p. 210, pl. vii): DOEDERLEIN (93).  
*Solasteridae*, diagnosis; GREGORY in BATHER (19) p. 255.  
†*Sphaeraster* Quenst., referred to *Pentacerotidae*; op. cit. p. 254.  
†*Sphaerites* Quenst., referred to *Pentacerotidae*; loc. cit.  
*Sporasterias*; GREGORY in BATHER (19) 258.  
*Stegmaster*; op. cit. p. 254.  
*Stellaster*; op. cit. p. 253. †*S. coombi*; DEECKE (82) p. 42. *S. incei*, measurements of 12 specimens, black pigment on ventro-lateral plates, parasitic *Thyca*; BEDFORD (25) p. 294.  
†*Stenaster*; restr. to *S. salteri*, and excl. *S. pulchellus*; GREGORY in BATHER (19) p. 251.  
*Stephanaster*; op. cit. p. 253.  
*Steraster*; GREGORY in BATHER (19) p. 257.  
*Stichaster*; op. cit. p. 255. *S. albulus*, geogr. and bathymetric distrib., habitat, 6-, 3-, and 5-armed specimens (p. 479); *S. arcticus*, distrib. (p. 478); *S. roseus*, geogr. and bathymetric distrib., habitat (p. 477): LUDWIG (210).  
*Stichasteridae*, diagnosis, divided into subfam. *Stichasterinae* and *Zoroasterinae*; GREGORY in BATHER (19) p. 255.  
*Stichasterinae*, diagnosis; loc. cit.  
*Styracaster*; op. cit. p. 251. *S. sp.*, 5248 metres, near Cocos Is., text-fig. (p. 288), *S. sp.* nondescr. 2492 metres, Gulf of Guinea, figd. (p. 491); CHUN (63). *S. armatus* Perr. nom-nud., 4900 metres off C. Finisterre;

- S. edwardsi* Perr. nom-nud., 4020 metres betw. Portugal and Azores ;  
*S. horridus* Slad., *ibid* : RICHARD (282) p. 76.  
†*Taeniaster* ; GREGORY in BATHER (19) p. 251.  
†*Taeniasteridae*, diagnosis ; op. cit. p. 250.  
*Tarsaster* ; op. cit. p. 255.  
*Temnaster hexactis* is syn. of *Pteraster obscurus*, and the genus not distinguishable ; DOEDERLEIN (93) p. 216.  
*Tethyaster* ; GREGORY in BATHER (19) p. 251.  
†*Tetraster* ; op. cit. p. 250.  
*Thoracaster* ; op. cit. p. 251.  
*Tonia* ; op. cit. p. 255.  
*Tremaster* ; op. cit. p. 254.  
†*Trentonaster* n. g. with genotype *Palasterina stellata* [preocc. *Schuchertia*] referred to *Phanerozonia* ; STUERTZ (325) p. 225.  
†*Trichasteropsis* ; GREGORY in BATHER (19) p. 250.  
†*Trichotaster* ; op. cit. p. 259.  
†*Tropidaster*, abactinal "keel" due to exposure of ambulacrals ; op. cit. p. 255.  
†*Tropidasteridae*, diagnosis ; loc. cit.  
*Tylaster* ; op. cit. p. 254. *T. willei*, distrib. ; LUDWIG (210) p. 459.  
*Utiophora* ; GREGORY in BATHER (19) p. 258.  
†*Urasterella* ; op. cit. p. 251.  
*Valvaster* ; op. cit. p. 258.  
*Valvasterinae*, diagnosis ; loc. cit.  
†*Xenaster* ; GREGORY in BATHER (19) p. 250.  
†*Xenasterinae*, sub-fam. of *Palaeasteridae*, diagnosis ; loc. cit.  
*Zoroaster* ; op. cit. p. 255. *Z. fulgens*, figd. ; CHUN (63) p. 489.  
*Zoroasterinae*, diagnosis ; GREGORY in BATHER (19) p. 255.

## (E.)—OPHIUROIDEA.

*Ophiuroidea* as Sub-class of *Stelleroidea* (vide IV, A), diagnosis, and division into Orders, *Lysophiuræ*, *Streptophiuræ*, *Cladophiuræ*, *Zygophiuræ* ; GREGORY in BATHER (19) pp. 273–278. Classification of *Oph.*, discussion of Bell's classification, 1892, and Gregory's, 1896 [i.e. 1897], reply to criticisms of Gregory and correction of misstatements, with divisions of Palaeozoic *Oph.* ; STUERTZ (325) p. 177 et sqq. Diagnosis, name, and systematic position of *Ophiuroidea* ; HAMANN (148) pp. 746, 748.

- †*Acroura* ; GREGORY in BATHER (19) p. 278.  
†*Aganaster*, incl. *Ophiopege* ; op. cit. p. 275.  
*Aganasteridae*, as sub-fam. of *Protophiuræ*, defined ; STUERTZ (325) p. 203.  
*Allotichia* Haeckel, discussed ; op. cit. p. 194.  
*Amphiglypha* ; GREGORY in BATHER (19) p. 278.  
*Amphilepis* ; loc. cit.  
*Amphilimna* maintained (p. 316), diagnosis, incl. *A. caribea* (p. 319) which is perhaps young of *A. olivacea* (p. 318, pl. xlii) ; VERRILL (341).  
*Amphiocnida* [not n. s.-g. as stated, but Verrill 1899], s.-g. of *Amphiura*, diagnosis (pp. 307, 311, 316, 318), *A. alborivida*, *A. brachiata*, *A. pilosa*, *A. putnami*, genotype (p. 318) ; VERRILL (341).  
*Amphiodia*, diagnosis (p. 306), key to W. Atlantic spp. (p. 313), *A. atra*, *A. antarctica*, *A. andreae*, *A. barbarae*, *A. chilensis*, *A. fissa*, *A. gibbosa*, *A. grisea*, *A. impressa*, *A. integra*, *A. lasvis*, *A. lutea* (also as *Ophiocnida*, q.v.), *A. occidentalis*, *A. ochroleuca*, *A. olivacea*, *A. orstedii*, *A. planispina*, *A. pulchella*, *A. repens*, *A. rüsei*, and *A. urtica* (p. 313) ; VERRILL (341).

*Amphioplus*, diagnosis (p. 306), introduced as n. g. [but is Verrill 1899] with key to W. Indian spp. (p. 314); *A. abdita* (p. 314); *A. agassizii*, n. sp., 116 fms., W. Indies, based on "*Amphiura* sp." Lyman (Bull. Mus. Harvard x, p. 253, pl. v, figg. 64-66, 1883) redescrip. (pp. 314, 315); *A. canescens*, *A. cernua* (p. 315); *A. cuneata* (p. 314); *A. dalea* (p. 315); *A. duplicatus* (p. 314); *A. glauca*, *A. laevis* (p. 315); *A. macilenta*, *A. nereis* (p. 314); *A. patula* (p. 315); *A. stearns*, *A. tumida*, *A. verrilli* (p. 314): VERRILL (341).

*Amphipholis*; GREGORY in BATHER (19) p. 278: restricted and diagnosed with genotype "*A. squamata* (or *A. elegans*)" (p. 306), ditto with genotype *A. januarii* (p. 311), key to W. Atlantic spp. (p. 312); VERRILL (341): restr. with genotype *A. squamata* (= *A. elegans*); VERRILL (342) p. 587. *A. abnormis*, *A. coreae*, *A. depressa*, *A. elegans*, *A. geminata*; VERRILL (341) p. 312. *A. goësi*; loc. cit. and VERRILL (342) p. 587. *A. gracillima*, *A. hastata*, *A. impressa*, *A. kochi*, *A. limbata*, *A. microdiscus*, *A. patagonica*, *A. pugetana*, *A. puntarenæ*, *A. squamata*, *A. subtilis*; VERRILL (341) p. 312. *A. tenera*; loc. cit. and VERRILL (342) p. 587. *A. tenuispina*, *A. torelli*, *A. violacea*; VERRILL (341) p. 312.

*Amphipsila*, diagnosis, with genotype *A. maculata*; VERRILL (341) pp. 333, 348, pl. xliii.

*Amphiura*; GREGORY in BATHER (19) p. 278: discussed, restricted, and diagnosed, with genotype *A. chiujei*, also divided into sub-genera, and key to W. Atlantic spp. given; VERRILL (341) pp. 305-311: key to French spp.; ACLOQUE (1) p. 456. *A. angularis* (p. 376), *A. atlantica* (p. 311); VERRILL (341). *A. belgicae*, n. sp., 'Belgica' Antarctic Expedition; KOEHLER (180) p. 819. *A. canadensis*, n. sp., G. of St. Lawrence (p. 311), *A. complanata* (p. 309), *A. crassipes* (p. 309), *A. denticulata* (p. 310); VERRILL (341). *A. elegans*; ALLEN & TODD (7) p. 188. *A. eugeniae* (p. 309), *A. exigua*, n. sp., G. of St. Lawrence (p. 311), *A. (Hemilepis) flexuosa* (p. 309), *A. fragilis* (p. 311), *A. grandisquama* (p. 310), *A. incisa* (p. 309), *A. lunaris* (p. 310), *A. otteri*, protective colour (pp. 308, 309), *A. palmeri* (p. 309); VERRILL (341). *A. patula*; CHUN (63) p. 226. *A. polita*, n. sp., 'Belgica' Antarctic Expedition; KOEHLER (180) p. 819. *A. relicta*; KOEHLER (179) pl. xvi. *A. (Hemilepis) semiermis*; VERRILL (341) p. 309. *A. squamata*, original photograph, habits; DAVENPORT (80) fig. 184: host of Copepod; GIESBRECHT (129) p. 201. *A. stimpsoni*; VERRILL (341) p. 310. *A. sundevalli*; loc. cit.: habitat, distrib., large individuals, differences from younger; GRIEG (139) p. 265. *A. tomentosa*; VERRILL (341) p. 376.

*Amphiuridae*, diagnosis; GREGORY in BATHER (19) p. 278.

†*Aspidura*; loc. cit.

*Astero*—, vide *Astro*—.

*Astrochele*; GREGORY in BATHER (19) p. 276.

*Astrochelidae*, diagnosis; VERRILL (341) p. 369.

*Astrocladus*, n. g., with genotype *Euryale verrucosum* Lam.; loc. cit.

*Astroclon*; GREGORY in BATHER (19) p. 276.

†*Astrocnida*; loc. cit.

*Astrocreas*; loc. cit.

*Astrodia*, diagnosis; VERRILL (341) p. 371.

*Astrogenon*, n. g., genotype *Ophiogeron supinus* Lym.; op. cit. p. 358.

*Astrogomphus*; GREGORY in BATHER (19) p. 276.

*Astronycidae*, diagnosis; loc. cit.: ditto; VERRILL (341) p. 370.

*Astronyx*; GREGORY in BATHER (19) p. 276: key to French spp.; ACLOQUE (1) p. 457. *A. sp. nondescr.*; CHUN (63) p. 170. *A. lymani*, descr.; VERRILL (341) p. 371, pl. xlii.

*chiura*, supposed intermediate between *Ast.* and *Oph.*; GREGORY in

- BATHER (19) p. 238 [but the facts adduced are the reverse of the actual case]: [*Astrophisura*?] "Neues Ophiuridengenus" 500 metres, Agulhas bank, figured; CHUN (63) p. 468.
- Astrophyton*; GREGORY in BATHER (19) pp. 260, 276, fig. xxxii: history of name; VERRILL (341) p. 368: key to French spp.; ACLOQUE (1) p. 458. *A. sp.*, large individual, Spitzbergen; SCHAUDINN (296) p. 236. *A. laevipelle* syn. of *Euryale aspera* s. str.; LORIOLO (207) p. 92. *A. muricatum*; DÜRDEN (101) p. 620.
- Astroporpa*; GREGORY in BATHER (19) p. 276.
- Astroschema*; loc. cit. and figg. xxviii, xxix.
- Astroschem[at]idae*, diagnosis; VERRILL (341) p. 370.
- Astrotoma*; GREGORY in BATHER (19) p. 276.
- †*Bundenbachia*; op. cit. p. 274: arm-ossicles not divided into ambulacral and adambulacral portions, belongs to *Palaeophiuridae* Greg.; STUARTZ (325) p. 187. *B. grandis*, vide *Palaeophiomyxa*.
- †*Cholaster*; GREGORY in BATHER (19) p. 275.
- Cladophiurae*, diagnosis, divided into Families *Astronycidae*, *Trichasteridae*, and *Gorgonocephalidae*; op. cit. p. 276: discussed as classificatory division; STUARTZ (325) p. 178.
- Colophiurae* Haeck., discussed; op. cit. p. 193.
- Ctenamphiura*, n. g. of *Amphiuridae* with genotype *C. maxima* (Lym.); VERRILL (341) p. 306.
- †*Eoluidia*; GREGORY in BATHER (19) p. 275.
- †*Eoluididae*, diagnosis; loc. cit.: STUARTZ (325) pp. 197, 203.
- †*Eophiuridae* [err. pro *Eophiuritidae*, melius autem *Eoluididae*], as subfam. of *Protophiureae*, defined, incl. *Eophiurites* [*Eoluidia*], *Eospondylus*, *Miospondylus*; STUARTZ (325) p. 203.
- †*Eophiurites* nom. nov. pro *Eoluidia* Stuartz, because *Oph.* and not *Ast.* [insufficient reason]; op. cit. p. 190.
- †*Eospondylus*; GREGORY in BATHER (19) p. 275.
- †*Ephippiellum symmetricum* Lomnicki, = *Oph.* arm-ossicles; ANDRUSOV (15).
- †*Eucladia*, systematic position; STUARTZ (325) p. 183: ditto, and *E. johnsoni*, discussed; GREGORY in BATHER (19) p. 275.
- †*Eucladiidae*, diagnosis; loc. cit.: defined, as either "Primitiv-Streptospondyli" or *Palae-Euryalidae*; STUARTZ (325) pp. 198, 204.
- †*Eugaster*; GREGORY in BATHER (19) p. 274. *E. logani* referred to *Ophiocrinasteridae*; STUARTZ (325) p. 200.
- Euryale*; GREGORY in BATHER (19) p. 276. *E. aspera* discussed and restricted (p. 91), specimens so named by Müller & Troschel, Lyman, and Studer being referred to *E. studeri*, n. sp., Singapore, characters of young (p. 86, pl. viii); LORIOLO (207). *E. verrucosum*, vide sup. *Astrocladus*.
- Euryalidae* restr., diagnosis; VERRILL (341) p. 366.
- Euryalinae*, n. sub-fam. of *Euryalidae*, for *Euryale*; op. cit. p. 367.
- †*Furcaster*; GREGORY in BATHER (19) p. 275, fig. xxxi: no ventral arm-plates; STUARTZ (325) p. 191.
- Furcasteridae*, as sub-fam. of *Protophiureae*, defined; op. cit. p. 203.
- †*Geocoma* d'Orb.; GREGORY in BATHER (19) p. 278.
- Gorgonocephalidae*; op. cit. p. 276: diagnosis; VERRILL (341) p. 367.
- Gorgonocephalus*; GREGORY in BATHER (19) p. 276: history of name; VERRILL (341) p. 368. *G. agassizi*, measurements, comparison with other N. European spp.; DOEDERLEIN (93) p. 227, pl. x: distrib., young individual figured, habitat; GRIEG (139) p. 271. *G. eucnemis*; HARTLAUB (153) pp. 177, 187, 190: incl. *G. malmgreni*, measurements and variation; DOEDERLEIN (93) p. 226, pl. x: distrib., young individuals descr. and figd., habitat; GRIEG (139) p. 268. *G. lamarckii* (p. 278), and *G. lincki* (p. 277), not Arctic: *greni*, vide *G. eucnemis*.



- Gymnolophus* referred to *Ophiotrichidae*; VERRILL (341) p. 304.
- Helianthasteridae*, defined, as either "Primitiv-Streptospondylinae" or *Palae-Euryalidae*; STUART (325) p. 204.
- Hemieuryale*; GREGORY in BATHER (19) p. 276. *H. pustulata*, perhaps incl. *Ophiura cuspidifera* Lam., redescrib.; VERRILL (341) p. 363.
- Hemieuryalidae*, diagnosis; loc. cit.
- Hemiglypha*; GREGORY in BATHER (19) p. 278.
- Hemilepis*, s.-g. of *Amphiura* [not n. s.-g. as queried in Zool. Rec. 1899, but now ascribed to Ljungman 1871]; VERRILL (341) pp. 307, 309.
- Hemipholis*; GREGORY in BATHER (19) p. 278, fig. xxxiii.
- †*Lapworthura*; op. cit. p. 275.
- †*Lapworthuridae*, diagnosis; loc. cit.: as sub-fam. of *Protophiureae*, defined; STUART (325) pp. 197, 203.
- Lutkenia* referred to *Ophiotrichidae*; VERRILL (341) p. 304.
- †*Lysophiuræ*, Order, diagnosis, divided into Families *Protasteridae* and *Palaeophiuridae*; GREGORY in BATHER (19) p. 274: rejected in favour of *Ophio-Eocrinasteriæ*; STUART (325) pp. 184, 195.
- †*Miospondylus*; GREGORY in BATHER (19) p. 275.
- Neoplax*; op. cit. p. 276.
- †*Onychaster*, discussed; op. cit. p. 275: systematic position; STUART (325) p. 180.
- †*Onychasteridae*, diagnosis; GREGORY in BATHER (19) p. 275: as sub-fam. of *Protophiureae*, defined; STUART (325) pp. 198, 202.
- Ophiacantha*; GREGORY in BATHER (19) p. 278: habitat, habits, protective adaptation, age-differences (p. 321), key to W. Atlantic spp. (p. 323), restricted and diagnosed (p. 330); *O. abyssicola* (pp. 324, 335); *O. aculeata* (pp. 323, 335); *O. anomala*, viviparous (pp. 324, 335); VERRILL (341). *O. (Ophiectodia) antarctica*, n. sp., partially defined, 'Belgica' Antarctic Expedition; KOEHLER (180) p. 820. *O. aspera*; VERRILL (341) pp. 324, 334. *O. bartletti*, vide *Ophiopora*. *O. bidentata*; DOEDERLEIN (93) p. 225: VERRILL (341) pp. 323, 335: habitat, distrib., incl. *O. fraterna* and perhaps *O. nigra*; GRIEG (139) p. 267. *O. cosmica*; CHUN (63) p. 170: VERRILL (341) pp. 324, 336, 337. *O. crassidens* (pp. 325, 335, 339), *O. cuspidata* (p. 337); VERRILL (341). *O. decora*; KOEHLER (179) pl. xvi. *O. enopla* (pp. 324, 335, 338), *O. fraterna* (pp. 324, 335), *O. granulifera* (pp. 326, 334), *O. marsupialis* (pp. 337, 338), *O. millespina* (pp. 324, 334), *O. normani* (pp. 349, 353), *O. (Ophiectodia) pectinula*, n. sp., West Indies (pp. 325, 334, 338, 340, 342), *O. pentacrinus* (pp. 324, 334), *O. placentigera* (p. 340); VERRILL (341). *O. (Ophiolimna) polaris*, n. sp., 'Belgica' Antarctic Expedition; KOEHLER (180) p. 820. *O. rosea* (pp. 337, 338), *O. scolopendrica* (p. 332 [vide *Ophientrema*]), *O. scutata* (pp. 325, 334, 337) descr., variations from type (p. 341), *O. segesta* (pp. 325, 335, 340), *O. spectabilis* (pp. 325, 335, 338, 339), *O. stellata* (pp. 325, 334); VERRILL (341). *O. troscheli*, vide *Ophiacanthella*. *O. vagans*; KOEHLER (179) pl. xviii. *O. valenciennesi* (pp. 337-340, 348), *O. varispina* (pp. 326, 334, 339), *O. vepratrica* (pp. 326, 335, 340); VERRILL (341).
- Ophiacanthella*, diagnosis (pp. 332, 344), *O. troscheli* (pp. 327, 336-339); VERRILL (341).
- Ophiacanthidae* diagnosed and discussed, incl. *Ophiacantha*, *Ophiomitra*, *Ophiotrema*, *Ophiocamaræ*, *Ophioblebes*, *Ophiothamnus*, *Ophiocopa*, *Ophiociton*, *Ophiotoma*, and (!) *Ophioblenna*, also *Ophialcaea*, *Ophiomitrella*, *Ophiacanthella*, *Ophioscalus*, *Ophiolimna*, *Ophiopristis*, *Ophiotreta*, *Ophientodia*, *Ophiectodia*, *Ophiopora*, *Amphipsila*, *Ophioplenthaca*, also sub-fam. *Ophiochondrinæ*; VERRILL (341) p. 319 et seqq.
- Ophiactis*; GREGORY in BATHER (19) p. 278. *O. asperula*; KOEHLER (180) p. 818. *O. krebsii*, distinguished from *O. savignyi* and *O. virescens*, colour, habitat, fission; VERRILL (342) p. 586.

- Ophialcaea*, diagnosis (p. 331), *O. nuttingii* (pp. 326, 331, 336, 337), *O. rufescens* (p. 331), *O. tuberculosa* (p. 331); VERRILL (341).
- Ophiambix*; GREGORY in BATHER (19) p. 276: referred to *Ophioscolecidae*; VERRILL (341) p. 358.
- Ophiarachna*; GREGORY in BATHER (19) p. 277.
- Ophiarthrum*; op. cit. p. 278. *O. elegans*; KOEHLER (179) pl. xix.
- Ophidiaster* sp.; ANDREWS (13) p. 117.
- Ophiectodia*, diagnosis; VERRILL (341) p. 331. *O. antarctica*, vide sub *Ophiacantha*. *O. enopla* (p. 331); *O. pectinula*; *O. rosea* and *O. spectabilis* (p. 331): VERRILL (341): vide etiam sub *Ophiacantha*.
- Ophientodia*, diagnosis, *O. cuspidata*, *O. pectinula* [= *Ophiectodia*, sub *Ophiacantha*], *O. scutata*; VERRILL (341) p. 330.
- Ophientrema*, n. s.-g. of *Ophiacantha*, with genotype *O. scolopendrica*; *O. granulosa*: op. cit. p. 332.
- Ophiernus*; GREGORY in BATHER (19) p. 278.
- Ophioaethiops* referred to *Ophiothrichidae*; VERRILL (341) p. 304.
- Ophioblenna*; GREGORY in BATHER (19) p. 278.
- Ophiobranchiionidae*, n. fam. for *Ophiobranchion uncinatus*; VERRILL (341) p. 366.
- Ophiobyrsa*; GREGORY in BATHER (19) p. 276: referred to *Ophioscolecidae*; VERRILL (341) p. 358. *O. serpens*, vide *Ophiobyrsella*.
- Ophiobyrsella*, n. g., with genotype *Ophiobyrsa serpens* Lym. (p. 358), *O. hystrix* (p. 359); VERRILL (341).
- Ophiocamax*; GREGORY in BATHER (19) p. 278: descr., with key to spp.; VERRILL (341) p. 354. *O. austera* (p. 355, pl. xliii), *O. fasciculata* (p. 355); op. cit. *O. gigas*, n. sp., size alone given, 'Belgica' Antarctic Expedition; KOEHLER (180) p. 820. *O. hystrix*, *O. vitrea*; VERRILL (341) p. 355.
- Ophiocampsia* referred to *Ophiothrichidae*; op. cit. p. 304.
- Ophiocentrus*; GREGORY in BATHER (19) p. 278.
- Ophioceramis*; loc. cit. and fig. xxiii.
- Ophiochiton*; GREGORY in BATHER (19) p. 278.
- Ophiochondrella*, n. g. (p. 355), with genotype *O. squamosus* (Lym.) (p. 356); VERRILL (341).
- Ophiochondrinae*, n. sub-fam. of *Ophiacanthidae*, incl. *Ophiochondrus* and *Ophiochondrella*; op. cit. p. 355.
- Ophiochondrus*; GREGORY in BATHER (19) p. 276: emendation of diagnosis; VERRILL (341) p. 356. *O. crassispinus*, specimens referred by Lyman to *O. convolutus* descr.; loc. cit.
- Ophiocytra*; GREGORY in BATHER (19) p. 278.
- Ophiocnemis*; loc. cit.: referred to *Ophiothrichidae*; VERRILL (341) p. 304. *O. cotteui*, n. sp., coast of Liberia, on gorgonians, types in coll. de Lorient (p. 84, pl. vii); *O. marmorata*, granulation of arms (p. 84), size of dorsal arm-plates (p. 86); *O. venusta*, n. sp., from Singapore, compared with *O. clypeata* and *O. marmorata*, forms link with *Ophiomaza* (p. 81, pl. viii): LORIOU (207).
- Ophiocnida*; GREGORY in BATHER (19) p. 278: discussed (p. 315), restr. and diagnosed with genotype *O. hispida*, incl. *Ophiocnidella*, with key to spp. (p. 317); VERRILL (341). *O. brachiata*, burrowing; ALLEN & TODD (7) p. 187. *O. echinata*; KOEHLER (179) pl. xvii: VERRILL (341) p. 317. *O. filigranea*, *O. hispida*, *O. loveni*, *O. lutkeni* (also as *Amphiodia* q.v.), *O. scabra*, *O. scabriuscula*, *O. sexradia*; VERRILL (341) p. 317.
- Ophiocoeta*; GREGORY in BATHER (19) p. 277.
- Ophiocoma*; op. cit. p. 278: key to French spp.; ACLOQUE (1) p. 456: key to Belgian spp.; LAMERE (186) p. 33. *O. aethiops*; ANDREWS (13) p. 117: CONANT (71). *O. echinata* spawns from 8 to 10 p.m.; GRAVE (135) p. 85. *O. erinaceus*, endoskeleton; STEWART (318). *O.*

- lubrica*; KOEHLER (179) pl. xx. *O. nigra*; NORDGAARD (245) p. 8: host of Copepod; GIESBRECHT (129) p. 201: distrib.; GRIEG (139) p. 277. *O. pumila*, 6 and 5 rayed; VERRILL (342) p. 583. *O. riisei*, distinguished from *O. echinata*; op. cit. p. 586. *O. scolopendrina*; ANDREWS (13) p. 117.
- Ophiocomidae*; GREGORY in BATHER (19) p. 278.
- Ophiocoris*; GREGORY in BATHER (19) p. 277.
- Ophiocopa*; VERRILL (341) p. 333.
- Ophiocreas*; GREGORY in BATHER (19) p. 276. *O. constrictus*, n. sp., Dusky Sound, N. Z., also Jackson B., type in Otago Mus.; FARQUHAR (107) no fig.
- Ophiocrene*; GREGORY in BATHER (19) p. 276.
- Ophiocten*; op. cit. p. 278. *O. dubium* and *megaloplax*, nomm. nuda 'Belgica' expedition; KOEHLER (180) p. 819. *O. pallidum*; CHUN (63) p. 226. *O. sericeum*; DOEDERLEIN (93) p. 225: habitat, distrib.; GRIEG (139) p. 264.
- Ophiocymbium*; GREGORY in BATHER (19) p. 278.
- Ophiocera*, diagnosis, and *O. stimpsoni*, redescri.; VERRILL (341) p. 362, pl. xlii.
- Ophioderma*; GREGORY in BATHER (19) p. 277: key to French spp.; ACLOQUE (1) p. 455. +*O. bonnardi*; ENGEL (106) p. 242. *O. longicauda*, no galvanotaxis in adult; NAGEL (239) p. 337. +*O. milleri*; WALTON (346).
- Ophiodermatidae*, diagnosis; GREGORY in BATHER (19) p. 277.
- +*Ophio-Encrinasteriæ*, coincides with and precedes *Lysophiuræ* Greg., previously called a 'Family' only because Stuerz followed Zittel's system (p. 184), re-defined as a family (pp. 195, 198), recent allies (p. 199); STUERTZ (325).
- Ophiogeron*; GREGORY in BATHER (19) p. 276, fig. xxvi: discussed, referred to *Ophioscolecidae*; VERRILL (341) p. 357.
- Ophioglyphæ*; GREGORY in BATHER (19) p. 278, fig. xix: key to Belgian spp.; LAMEERE (186) p. 32. *O. deshayesi*; CHUN (63) p. 170. *O. carinifera*, *doederleini*, *frigida*, and *gelida*, nomm. nuda 'Belgica' expedition; KOEHLER (180) p. 819. *O. hexactis*, with young in brood-pouch, text-figg.; CHUN (63) pp. 253, 254. *O. lacertosa*, host of Copepod; GIESBRECHT (129) p. 201. *O. lymani*; CHUN (63) p. 170. *O. robusta* and *O. sarsi*; DOEDERLEIN (93) p. 224. *O. sinensis* and *O. stellata*; KOEHLER (179) pl. xv.
- Ophiogona*; GREGORY in BATHER (19) p. 277.
- Ophiogymna*; op. cit. p. 278: referred to *Ophiiothrichidae*; VERRILL (341) p. 304.
- Ophiohelidae*, n. fam. for *Ophiohelus*; VERRILL (341) p. 361.
- Ophiohelus*; GREGORY in BATHER (19) p. 276: not degenerate but primitive, and as much *Zygophiuræ* as *Streptophiuræ*; STUERTZ (325) p. 185. *O. pellucidus* and *O. umbella*; VERRILL (341) p. 361.
- Ophioteles*; GREGORY in BATHER (19) p. 278.
- Ophiotelepididae*, diagnosis; loc. cit.
- Ophiotelepis*; loc. cit.: key to French spp.; ACLOQUE (1) p. 456. *O. elegans*, breeding period; WILSON (35) p. 350. *O. paucispina*; VERRILL (342) p. 585. *O. rugosa*; KOEHLER (179) pl. xv.
- Ophiolimna*, diagnosis (pp. 333, 345), *O. bairdii* (pp. 327, 335, 340), *O. mixta* (pp. 327, 336, 337, 340) descr. (p. 346); VERRILL (341). *O. polaris*, vide sub *Ophiacantha*.
- Ophiolophus* referred to *Ophiiothrichidae*; op. cit. p. 304.
- Ophiomartus* [err. pro -mastus]; GREGORY in BATHER (19) p. 278.
- Ophiomastix*; loc. cit. *O. luetkeni*, n. sp., Ternate and Cebu; PREFFER (267).
- Ophiomastus ludwigi*, n. sp., incompletely defined, 'Belgica' Antarctic expedition; KOEHLER (180) p. 819.

- Ophiomaza*; GREGORY in BATHER (19) p. 278: referred to *Ophiiothrichidae*; VERRILL (341) p. 304. *O. moerens*; KOEHLER (179) pl. xxi.
- Ophiomitra*; GREGORY in BATHER (19) p. 278: diagnosis (p. 349), key to spp. (p. 350); *O. exigua* referred to *Ophiiothamnus* (p. 350); *O. normani* referred to *Ophiacantha* (p. 349); *O. ornata* (p. 350); *O. spinea* (p. 351); *O. valida* (p. 350), Lyman's types were immature (p. 349), redescr. (p. 353): VERRILL (341).
- Ophiomitrella*, diagnosis (pp. 332, 352), *O. cordifera* (p. 352), *O. cornuta* (p. 352), *O. exigua* (p. 353 [also as *Ophiomitra* and *Ophiiothamnus*, qq.v.]), *O. globulifera* (p. 352), *O. laevipellis* (pp. 332, 334), redescr., variations from type (p. 343, see also pp. 326, 336, 339, 352); VERRILL (341).
- Ophiomusium*; GREGORY in BATHER (19) p. 278.
- Ophiomyces*; op. cit. p. 276. *O. frutescens*, *O. grandis*, *O. mirabilis*, *O. spathifer*; VERRILL (341) p. 360.
- Ophiomycetidae*, n. fam., with sub-famm. *Ophiomycetinae* and *Ophiiotholinae*; op. cit. p. 359.
- Ophiomycetinae*, n. sub-fam. for *Ophiomyces*; op. cit. p. 360.
- Ophiomyza*; op. cit. p. 361: in two sections; GREGORY in BATHER (19) p. 276: key to French spp.; ACLOQUE (1) p. 457.
- Ophiomyxidae* restr., diagnosis, incl. only *Ophiomyxu* and *Ophioderu*; VERRILL (341) p. 361.
- Ophionema*; GREGORY in BATHER (19) p. 278.
- Ophionephthys*; loc. cit.
- Ophionereis*; loc. cit.
- Ophiopaepale*; loc. cit.
- †*Ophiopoege*, vide *Aganaster*.
- Ophiopelte*, s.-g. of *Amphiuru* [not n. s.-g. as queried in Zool. Rec. 1899, but now ascribed to both Sars and Ljungman]; VERRILL (341) pp. 307, 310.
- Ophiopeltis*; GREGORY in BATHER (19) p. 278.
- Ophiopoeza*; op. cit. p. 277.
- Ophiopholis*; op. cit. p. 278, fig. xiii. *O. aculeata*; DOEDERLEIN (93) p. 225: spawns from 8 to 10 p.m.; GRAVE (135) p. 85: habitat, distrib., perhaps incl. *O. japonica*, *O. mirabilis*, *O. caryi*, and *O. kennealyi* as var.; GRIEG (139) p. 264.
- Ophiophragmus* [err. pro *-phragmus*]; GREGORY in BATHER (19) p. 278.
- Ophiophyllum*; loc. cit.
- Ophioplax*; op. cit. p. 277.
- Ophiopleura borealis*; KNIPOVICH (175) p. 458: habitat, measurements, distrib.; GRIEG (139) p. 261.
- Ophioplinthaca*, n. g. (p. 351), *O. carduus* (p. 351), *O. chelys* (p. 352), *O. dipsacos* (Lym.) genotype (p. 351), *O. incisa* (p. 351), *O. plicata* (p. 351), *O. narsii* (p. 352); VERRILL (341).
- Ophioplinthus*; GREGORY in BATHER (19) p. 278. *O. medusa*; CHUN (63) p. 226.
- Ophioplocus*; GREGORY in BATHER (19) p. 278.
- Ophioplus*, diagnosis, *O. tuberculosus*, mimics *Gorgonella*; VERRILL (341) p. 365, pl. xliii.
- Ophiopora*, diagnosis (pp. 333, 345), *O. bartletti* (pp. 327, 335, 337-340, 345; VERRILL (341)).
- Ophiopristis*, diagnosis (pp. 333, 347), *O. cervicornis* (pp. 328, 336-340, 347), *O. ensifera* (pp. 328, 336-340, 347), *O. hirsuta* (pp. 328, 336, 338-340, 347); op. cit.
- Ophiopsammium*; GREGORY in BATHER (19) p. 278: referred to *Ophiiothrichidae*; VERRILL (341) p. 304.
- Ophiopsila*; GREGORY in BATHER (19) p. 278: distinguished from *Amphiopsila* and referred to *Ophiocomidae*; VERRILL (341) p. 348: key to

- French spp.; ACLOQUE (1) p. 457. *O. pantherina*; KOEHLER (179) pl. xvi. *O. riisei*; VERRILL (342) p. 586.
- Ophiopteris*; GREGORY in BATHER (19) p. 278.
- Ophiopteron*; loc. cit.: referred to *Ophiiothrichidae*; VERRILL (341) p. 304.
- Ophiopus*; GREGORY in BATHER (19) p. 278. *O. arcticus*, habitat, distrib.; GRIEG (139) p. 266.
- Ophiopyren*; GREGORY in BATHER (19) p. 277. *O. sp. nondescr.*; CHUN (63) p. 170. *O. regulare*, n. sp., incompletely defined, 'Belgica' Antarctic Expedition; KOEHLER (180) p. 819.
- Ophiopyrgus*; GREGORY in BATHER (19) p. 277, fig. xxv. *O. australis*, n. sp., incompletely defined, 'Belgica' Antarctic Expedition; KOEHLER (180) p. 819.
- Ophiopsculus*, diagnosis (p. 331), *O. echinulatus* (pp. 327, 331, 334, 336, 338, 339); VERRILL (341).
- Ophiopsciasma*; GREGORY in BATHER (19) p. 276: discussed, referred to *Ophiopscolecidae*; VERRILL (341) p. 357.
- Ophiopscolecidae*, vide *Ophiopscolicidae*.
- Ophiopscoler*; GREGORY in BATHER (19) p. 276: discussed; VERRILL (341) p. 357. *O. fragilis*, n. sp., off Barbadoes, 82 fms.; op. cit. p. 358, no fig. *O. glacialis*; DOEDERLEIN (93) p. 226: habitat, distrib., measurements, colour, breeding-period; GRIEG (139) p. 268. *O. purpureus*; KNIPOVICH (175) p. 458.
- Ophiopscolicidae* [err pro -scolecidae] discussed; VERRILL (341) p. 357.
- Ophiophaerea* referred to *Ophiiothrichidae*; op. cit. p. 304.
- Ophiostigma*; GREGORY in BATHER (19) p. 278. *O. isacanthum*, 6 and 5 rayed; VERRILL (342) p. 583.
- Ophioteressia*, said to have a shallow ambulacral groove, open as in *Ast.*; GREGORY in BATHER (19) pp. 238, 262, 270, 274, 275, 276, fig. xiv: the statement denied by MINCHIN and PYCRAFT in Reviews.
- Ophioteressa* [sic, pro -essia] referred to *Protophiuræ*; STUERZ (325) pp. 189, 190.
- Ophiothamnus*; GREGORY in BATHER (19) p. 278. *O. exigua* (p. 328 [vide etiam sub *Ophiomitra* et *Ophiomitrelli*]), *O. gracilis* (pp. 323, 334, 340), *O. vicarius* (p. 328); VERRILL (341).
- Ophiothela*; GREGORY in BATHER (19) p. 278: referred to *Ophiiothrichidae*; VERRILL (341) p. 304.
- Ophiotholia*; GREGORY in BATHER (19) p. 276: not degenerate but primitive, and as much *Zygophiuræ* as *Streptophiuræ*; STUERZ (325) p. 185. *O. supplicans*; VERRILL (341) p. 361.
- Ophiotholinae*, n. sub-fam. for *Ophiotholia*; op. cit. p. 360.
- Ophiiothrichidae*, diagnosis; GREGORY in BATHER (19) p. 278: diagnosis, incl. *Ophiiothrix*, *Ophiothela*, *Ophiocnemis*, *Ophiopsammium*, *Ophiomaza*, *Ophiogynna*, *Ophiocampsis*, *Ophiotrichoides* [sic], *Ophiopteron*, *Lutkenia*, *Gymnolophus*, *Ophiocethiops*, *Ophiophaerea*, *Ophiolophus*, habitat, distrib.; VERRILL (341) p. 304.
- Ophiiothrichoides* referred to *Ophiiothrichidae*; loc. cit.
- Ophiiothrix*, referred to *Ophiiothrichidae*; loc. cit.: GREGORY in BATHER (19) p. 278: key to French spp.; ACLOQUE (1) p. 457: key to Belgian spp.; LAMEERE (188) p. 32. *O. angulata*; VERRILL (342) p. 585. *O. clypeata* is young of *Ophiocnemis marmorata*; LORIO (207) pp. 83, 86. *O. comata* (pl. xx), *O. diligens* (pl. xxi); KOEHLER (179). *O. fragilis*; ALLEN & TODD (7) p. 187: anatomy described as typical *Oph.*; APOSTOLIDES (17): galvanotaxis of larva; CARLGREN (56) p. 474: host of Copepod; GIESBRECHT (129) p. 201: vide etiam *Rosula*. *O. innocens* (pls. xviii, xix), *O. insidiosa* (pl. xvii), *O. otiosa* (pl. xix), *O. propinqua* (pls. xviii, xix), *O. speciosa* (pl. xvii); KOEHLER (179). *O. suensonii*; VERRILL (342) p. 585.
- Ophiotrema*; GREGORY in BATHER (19) p. 278: VERRILL (341) p. 350. *O. alberti*; loc. cit.

- Ophiotreta*, diagnosis (pp. 333, 347), *O. lineolata* (pp. 328, 336, 337, 339, 340, 348), *O. placentigera* (p. 348), *O. sertata* (pp. 328, 336-340, 348). *O. valenciennesi* (p. 348); VERRILL (341).
- Ophiotrochus*; GREGORY in BATHER (19) p. 278.
- Ophiuzona*; loc. cit. *O. nivea* (p. 306) var. *compta* (p. 306, pl. xliii), variations in oral shields and in dorsal plating; VERRILL (341).
- Ophiura*; GREGORY in BATHER (19) p. 278, figg. xv-xviii and xxiv: key to French spp.; ACLOQUE (1) p. 456. *O. brevicauda*; VERRILL (342) p. 584. *O. brevispina*, breeding period; WILSON (355) p. 350: incl. *O. serpens* and *O. olivacea*, distrib., bionomics, development from 36 hours to eight days, larva compared with that of *Antedon*; GRAVE (135). *O. ciliaris*; ALLEN & TODD (7) p. 187: descr. as typical *Oph.*; GREGORY in BATHER (19) p. 262 et seq., figg. xv-xviii. *O. ciliata*, distrib.; GRIEG (139) p. 277. *O. cinerea*; VERRILL (342) p. 585. *O. cuspidifera*, vide *Hemieuryale pustulata*; VERRILL (341) p. 363. *O. nodosa*, habitat, distrib., measurements (p. 263), *O. robusta*, habitat, distrib. (p. 262), *O. sarsi*, ditto (p. 261); GRIEG (139). †*O. serrata*; DIBLEY (92) p. 493. *O. stuwitsii* not a Spitzbergen sp.; GRIEG (139) p. 263. †*O. ? subcylindrica*; BRYDONE (51) p. 12.
- Ophiurella*; GREGORY in BATHER (19) p. 278.
- †*Ophiurina*; op. cit. p. 275.
- †*Ophiurinidae*, diagnosis; loc. cit.: as sub-fam. of *Protophiureae*, defined, incl. *Ophiurina*, *Protaster decheni*, and *Tremataster difficilis*; STUART (325) pp. 196, 200.
- †*Palaeophiomysa*, n. g. with genotype *Bundenbachia grandis*; STUART (325) p. 202.
- †*Palaeophiomysidae*, as sub-fam. of *Protophiureae*, incl. *Palaeophiomysa*; loc. cit.
- †*Palaeophiura*; GREGORY in BATHER (19) p. 274.
- †*Palaeophiuridae*; STUART (325) p. 195: diagnosis; GREGORY in BATHER (19) p. 274.
- †*Palaeospondylidae* [melius *Palastropectinidae*] as sub-fam. of *Protophiureae*, defined; STUART (325) p. 201.
- †*Palaeospondylus*, nom. nov. pro *Palastropecten* Stuart, because *Oph.* and not *Ast.* (p. 190) [an insufficient reason, and in any case preocc. by *Palaeospondylus* Traquair], removed by arm-structure from *Furcasteridae* (p. 191); STUART (325).
- Palasterina primaeva*, discussed on basis of previous descriptions; op. cit. p. 214.
- Palasterinae* [under this head is a discussion of *Palasterina* M'Coy; it is not clear whether a sub-fam. is intended, or a plural of *Palasterina*, or whether it is a misprint for *Palasterinidae*]; op. cit. p. 213.
- †*Palastropecten*; GREGORY in BATHER (19) p. 275: vide etiam *Palaeospondylus*.
- Paramphiura*, diagnosis; VERRILL (341) p. 306.
- †*Pectinura* Heller non Forbes; GREGORY in BATHER (19) p. 278, fig. xxii. *Pectinura* Forbes non Heller, *P. gorgonia*; KOEHLER (179) pl. xv.
- Polypholis*; GREGORY in BATHER (19) p. 278.
- †*Protaster*; op. cit. p. 274: Gregory's view as to arm-ossicles confirmed; STUART (325) p. 186. *P.* sp. nondescr. and *P. decheni* var.; DESTINEZ (91). *P. forbesi*; SCHUCHERT (303) p. 280.
- †*Protasteridae* Greg.; STUART (325) p. 195: diagnosis; GREGORY in BATHER (19) p. 274.
- †*Protophiurae* (or -ureae), the conception and name maintained, anatomy discussed (p. 189), diagnosis (p. 196), redefined and divided into sub-families [sic] *Ophiurinidae*, *Palaeospondylidae*, *Palaeophiomysidae*, *Onychasteridae*, *Lapworthuridae*, *Furcasteridae*.<sup>1</sup> *eridae* (p. 200); STUART (325).

- †*Ptilonaster*; GREGORY in BATHER (19) p. 274: not placed in *Ophiocrinasteriae*; STUART (325) p. 188.  
*Rosula* Linck = *Ophiotrix fragilis*; GREGORY in BATHER (19) p. 260.  
*Sigsbeia*; op. cit. p. 276. *S. murrhina*, mimics *Gorgonella*, young figd. VERRILL (341) p. 365, pl. xlii.  
*Stella lacertosa* Linck = *Ophiura ciliaris*; *S. lumbricalis longicauda* Linck = *Ophioderma longicauda*; GREGORY in BATHER (19) p. 260.  
*Stenocephalus indicus*; KOEHLER (179) pls. xxi, xxii.  
*Streptophiuræ*, diagnosis, divided into families *Ophiurinae*, *Lapworthiuridae*, *Eoluididae*, *Onychasteridae*, *Eucladiidae*, and living *Streptophiuræ*; GREGORY in BATHER (19) pp. 274–276: discussed as classificatory division, roughly equivalent to *Ophiomyxidae* or *Protophiuræ* of Stuart; STUART (325) pp. 178, 180, 196.  
†*Sturtzura*; GREGORY in BATHER (19) p. 274.  
†*Taeniaster cylindricus* (*Taeniura* Greg.) and *T. spinosus* referred to *Ophiocrinasteriae*; STUART (325) p. 200.  
†*Taeniura* Greg.; GREGORY in BATHER (19) p. 274: vide etiam *Taeniaster*.  
†*Tremataster*; GREGORY in BATHER (19) p. 275.  
*Trichaster*; op. cit. p. 276, fig. xxx. *T. palmiferus*; VERRILL (341) p. 367.  
*Trichasteridae*, diagnosis; GREGORY in BATHER (19) p. 276.  
*Trichastrinae* [sic], diagnosis; VERRILL (341) p. 367.  
*Zygophiuræ*, diagnosis, divided into Families *Ophiodermatidae*, *Ophiopodidae*, *Amphiuridae*, *Ophiocomidae*, and *Ophiotrichidae*; GREGORY in BATHER (19) p. 277: discussed as classificatory division; STUART (325) p. 178.  
*Zygostichia* Haeckel, discussed; op. cit. p. 194.

## F. CRINOIDEA.

- Crinoidea*, diagnosis (p. 94), history of previous classifications (p. 138), and full systematic arrangement under sub-classes *Mono-* and *Dicyclica* (p. 142 et sqq.); BATHER (19).  
Classification of *Inadunata* into *Monocyclica* and *Dicyclica* criticised; JAEKEL (167) p. 372.  
†*Abacocrinus*, incl. ? *Carolier*, discussed; BATHER (19) p. 165: *A. barrandei*, vide sub *Carolier*.  
†*Abracrinus*, vide *Carpocrinus*.  
†*Abrotocrinus*, vide *Scaphiocrinus*.  
†*Acacocrinus*; BATHER (19) p. 166.  
†*Acanthocrinus*; op. cit. p. 201.  
†*Achradocrinus*; op. cit. p. 178, fig. xcv: referred to *Gasterocomidae* (p. 155), to *Cyathocrinidae* (p. 158); ZITTEL & EASTMAN (369): former position correct; BATHER in Review.  
†*Acrochordocrinus*, incl. *Cyclocr.* d'Orb. (q.v.), *Mespilocr.* Quenst.; BATHER (19) p. 192.  
†*Acrocrinidae*, diagnosis; op. cit. p. 159.  
†*Acrocrinus*, discussed, with restoration of *A. amphora*; loc. cit. and fig. lxxiii.  
†*Actinocrinidae*, diagnosis, genera discussed; BATHER (19) p. 169.  
†*Actinocrinoidea*, Sub-order, diagnosis, divided into families *Actinocrinidae* and *Amphoracrinidae*; loc. cit.  
†*Actinocrinus*, incl. *Amphora*, *Blaiocr.*, descr.; loc. cit. and fig. lxxxiii. *A. semimultiramensis*, n. sp., Keokuk or Knob Limestone, near Salem, Ind., type in Amer. Mus.; WHITFIELD (350) p. 23, pl. iii.  
*Actinometra*, incl. *Comaster*, *Comatula* pars, *Phanogenia*; BATHER (19)

- p. 196. *A. sp. indet. valida*-group, *A. coppingeri*, *A. elongata*, var., and *A. fimbriata*; PFEFFER (267). †*A. formae*, n. sp., Upper Helvetian near Torino, type one dorsal cup in Mus. Geol. Torino; NOELLI (243) p. 28, pl. i. *A. litoralis*, *A. nigra*, *A. novae guineae*, *A. parvicirra*, and *A. pectinata*; PFEFFER (267). †*A. vagnasensis* occurs in Aptian and is perhaps syn. of *Antedon ricordeanus* (q.v.); LORIOLO (207) p. 76.
- Actinometridae*, diagnosis; BATHER (19) p. 196.
- †*Adelocrinus*, syn. of *Hexacr.* or *Arthracantha*; op. cit. p. 201. †*A. hystrix*, vide *Perischodonus* (IV, c).
- †*Adunata*, Order, diagnosis, evolution and relations of genera; BATHER (19) p. 155.
- †*Aesiocrinus*; op. cit. p. 180: vide etiam sub *Phialocr.*
- †*Agaricocrinus*, discussed; BATHER (19) p. 167. *A. adamsensis*, rediagnosed, incl. *A. hodgsoni* (p. 183), *A. americanus*, rediagnosed, incl. *A. tuberosus*, *A. bullatus*, *A. pentagonus*, *A. excavatus*, *A. nodosus*, *A. crassus* (?), *A. elegans*, *A. macadamai*, *A. nodulosus*, *A. splendens*, *A. dissimilis*, *A. gorbyi*, *A. indianensis*, *A. arcuata*, *A. profundus*, *A. tugurium*, *A. iowensis*, *A. keokukensis*, *A. nodulosus*, variations of tegmen figured (p. 184, pls. xviii-xxi); *A. brevis*, rediagnosed, incl. *A. pyramidalis*, *A. stellatus*, *A. corniculatus*, *A. geometricus*, *A. fiscellus*, *A. corrugatus* (p. 182); *A. chouteauensis*, rediagnosed, incl. *A. blairi*, *A. germanus*, *A. samponi* (p. 182); *A. coreyi*, rediagnosed, incl. *A. springeri* (p. 184); *A. gracilis*, rediagnosed (p. 183); *A. illinoisensis*, rediagnosed (p. 183); *A. inflatus*, rediagnosed, incl. *A. planoconvexus*, *A. decoratus*, *A. convexus* (p. 183); KLEM (173). *A. louisianensis*, n. sp., base of Lower Burlington Limestone, Louisiana, Mo.; ROWLEY (289). *A. ornotrema*, rediagnosed, incl. *A. bellatrema* (p. 183); *A. wortheni*, rediagnosed, incl. *A. whitfieldi*, *A. conicus* (p. 184); KLEM (173).
- †*Agassizocrinus*, incl. *Astylocr.*; BATHER (19) p. 181. *A. carbonarius*, now first descr.; BEEDE (29) p. 45, pl. vi.
- †*Agriocrinus*, vide *Hapalocrinus*.  
*Alecto*, vide *Antedon*.
- †*Allagecrinidae*, diagnosis, *Allagecrinus*, discussed; BATHER (19) p. 151.
- †*Allionia*, syn. of *Antedon*; op. cit. p. 201: discussed; NOELLI (243) p. 15.
- †*Alloocrinus*; BATHER (19) p. 162.
- †*Alloprosalloocrinus*; op. cit. p. 167.
- †*Amblacrinus*, vide *Coccocrinus*.
- †*Ampheristocrinus*; BATHER (19) p. 173, fig. lxxxviii: diagram; WELLER (348) p. 67: not based on genotype; BATHER in Review. *A. dubius*, n. sp., Niagaran, Romeo, Ill.; WELLER (348) p. 67, pl. xiv.
- †*Amphora*, vide *Actinocrinus*.
- †*Amphoracrinidae*, diagnosis; BATHER (19) p. 170.
- †*Amphoracrinus*, discussed; loc. cit.
- †*Ancyrocrinus*, vide *Myrtillocrinus*.
- †*Anisocrinus*, redescrib.; BATHER (19) p. 189.
- †*Anomalocrinus*, incl. *Ataxocr.*, discussed; op. cit. p. 146, fig. lviii.
- Antedon*; BURBIDGE (52): incl. *Alecto*, *Comatula*, *Hibernula*, *Phytocr.*, *Solanocr.*, *Hyponome*, and *Geocoma* Fraas; BATHER (19) p. 195, figg. ix, xv, xviii, xix, xxx, xxxiii, xlvi, xlvii, xlix, liv, lv: generalised section, new diagram; PERIER (262) p. 250, fig. 183: (s.v. *Comatula*) key to French spp.; ACLOQUE (1) p. 461. *A. sp.*, a hundred taken in a bow-net at 175 metres on Gorrington bank; RICHARD (282) p. 78.
- †*A. almerai*, n. sp., Aptian, near Barcelona, allied to *Decameros* (i.e. *A. ricordeanus* d'Orb.), type in coll. S. Almera; LORIOLO (207) p. 74, pl. viii. †*A. anglesensis*, a centro-dorsal, compared with *A. alticeps*; NOELLI (243) p. 23, pl. i. *A. bifida* (incl. *A. rosacea*), distrib., habits, habits, anat. descr. as typical *Crin.*; CUMING (76): ontogeny: et seq. figg. iv, vi, viii, x), axial ---



BATHER (19): general anat. recapitulated, anat., histol., and physiol. of joints of arms and cirri; BOSSHARD (44): colour variation, commensal; MALARD (222) p. 28: no galvanotaxis in adult; NAGEL (239) p. 337: origin of gonads in larva; RUSSO (292): endoskeleton; STEWART (318). *†A. burgundiaca*; LISSAJOUS (195) p. 25. *†A. conoidea*; DEECKE (82) p. 71. *A. cumingi*; PFEFFER (267). *†A. depereti*, centrodorsal, differences from type; NOELLI (243) p. 19, pl. i. *†A. depressus* (d'Orb. sub *Decameros*), notes on the type; LORIOLO (207) p. 77. *A. doederleini*, n. sp. of *Palmata* group, from Kagoshima, Japan; op. cit. p. 93, pl. ix. *A. eschrichti*; DOEDERLEIN (93) p. 228: HARTLAUB (153) pp. 177, 180, 187, 190: large at Spitzbergen; SCHAUDINN (296) p. 236: 102 metres, Sassen B., Spitzbergen; RICHARD (282) p. 78. *†A. fischeri*; BRUNHUBER (50). *†A. fontannesi*, centrodorsal, differences from type; NOELLI (243) p. 17, pl. i. *A. mediterranea*, host of Copepod; GIESBRECHT (129) p. 201. *†A. michelottii*, n. sp., Upper Helvetian near Torino, type at Mus. Geol. Torino (p. 16, pl. i); *†A. minimus*, n. sp., Upper Helvetian near Torino, type 1 dorsal cup in Mus. Geol. Torino (p. 21, pl. i); NOELLI (243). *†A. miocenicus*, vide *A. rhodanicus*. *†A. mystica*; DEECKE (82) p. 71. *†A. nicolasi*, n. sp., Upper Helvetian near Torino, type 1 centrodorsal in Mus. Geol. Torino (p. 22, pl. i); *†A. oblitus*, dorsal cup descr., compared with *A. rhodanicus* (p. 13, pl. i); NOELLI (243). *A. oxyacantha*; PFEFFER (267). *†A. paradoxa*; DEECKE (82) p. 71. *†A. paronai*, n. sp., Upper Helvetian near Torino, type 1 centrodorsal in Mus. Geol. Torino (p. 24, pl. i); *†A. pellati*, centrodorsals descr., differences from type (p. 27, pl. i); NOELLI (243). *†A. pertusa*, nom. nud.; CLARK (64) p. 5. *A. phalangium* (pp. 48, 487), *A. prolisa* (p. 487); CHUN (63). *†A. ricordeanus* (d'Orb. sub *Decameros*) redescri., perhaps incl. *Actinometra vagnasensis*; LORIOLO (207) p. 76. *†A. rhodanicus*, discussed, incl. *A. miocenicus*; NOELLI (243) p. 15. *A. rosacea*, vide *A. bifida* and *†A. mediterranea*. *†A. scrobiculata*; LISSAJOUS (195) p. 24. *†A. stellatus*, n. sp., Upper Helvetian near Torino, type 1 centrodorsal in Mus. Geol. Torino (p. 26, pl. i); *†A. taurinensis*, n. sp., Upper Helvetian, near Torino, types 2 dorsal cups in Mus. Geol. Torino (p. 20, pl. i); NOELLI (243).

*Antedonidae*, diagnosis, genera discussed; BATHER (19) p. 195.

*†Anthemocrinus*; op. cit. p. 200.

*†Anthocrinus*, vide *Crotalocrinus*.

*†Aporocrinus*, vide *Codocrinus*.

*Apiocrinidae*, diagnosis and genera discussed; BATHER (19) p. 191.

*†Apiocrinus*, descr.; loc. cit. and fig. xvii. *A. sp.*; HUENE (166) pp. 355, 362. *A. sp. indet.* (p. 5); *A. elegans* [i.e. *A. elongatus* Miller], doubtful columnals, zone of *Eudenia cardium* and Callovian (p. 4); *A. parkinsoni* [i.e. *A. elegans* Defr. non d'Orb.], fine specimen from Lacroix near Tournus descr. (p. 3, pl. i); LISSAJOUS (195). *A. rosaceus*?; LEBEDEV (192) p. 16.

*†Aporocrinus*, is an *Agelacrinid*; BATHER (19) p. 201.

*†Arachnocrinus*; op. cit. p. 175.

*†Archaeocrinus*; op. cit. p. 200, fig. cxxv. *A. depressus*, n. sp., Niagaran, various locs. near Chicago; WELLER (348) p. 89, pl. iii: anals not characteristic of genus; BATHER in Review.

*†Aristocrinus*, vide *Dactylocrinus* Quenst.

*Articulata* Miller (p. 138), Müller (pp. 138, 141), W. & Sp. (p. 139), Zittel (p. 139), grade of *Dendrocrinoidea* (p. 182); BATHER (19).

*†Arthroacantha* incl. *Hystericrinus*; op. cit. p. 158.

*Arthroacantha* RIGOT (35).

*†A. callosus*, *A. digitatus*, and *A. sp.* p. 280.

- †*Asteria*; BATHER (19) p. 201.  
*Asterias*, syn. of *Antedon* and *Actinometra*; loc. cit.  
†*Asteriatites*, syn. of *Antedon*; loc. cit.  
†*Asterocrinus* Lyon, vide *Pterotocrinus*.  
†*Asterocrinus* Münster; BATHER (19) p. 201.  
†*Astrios* Troost; op. cit. p. 202.  
*Astrocoma*, syn. of *Antedon* and *Actinometra*; loc. cit.  
†*Astrocrinus* Conr., vide *Melocrinus*.  
†*Astrocrinus* Cumb.; BATHER (19) p. 202.  
†*Astropodia*, its meaning; loc. cit.  
†*Astylocrinus*, vide *Agassizocrinus*.  
†*Ataxocrinus*, vide *Anomalocrinus*.  
*Atelecrinidae*, diagnosis; BATHER (19) p. 195.  
*Atelecrinus*; loc. cit. & fig. cxviii.  
†*Atelestocrinus*; op. cit. p. 179, fig. xcvi.  
†*Atocrinus*, probably *Platycr.*; op. cit. p. 202.  
†*Aulocrinus*; op. cit. p. 180. *A. agassizi*, pores in anal sac; SPRINGER (314) p. 140, pl. xvi.  
†*Austinocrinus*; BATHER (19) p. 183.  
†*Bactrocrinus*, discussed; op. cit. p. 173.  
†*Baerocrinus*, vide *Hoplocrinus*.  
†*Balanocrinus* Troost, syn. of *Lampterochr.*; BATHER (19) p. 202.  
†*Balanocrinus* Lor.; op. cit. p. 182, fig. ci. *B. antiquus* (p. 20); *B. bathonicus*, large columnals approaching *B. pentagonalis* (p. 21); *B. campichei*, distinction from *B. subteres* (p. 23); *B. changarnieri* (p. 23); *B. inornatus* (p. 21); *B. marioni* (p. 23); *B. moeschi* (p. 21); LISSAJOUS (195). *B. pentagonalis*; op. cit. p. 22: HUENE (166) p. 355: KOPY (177) p. 200: LORIOLE (206) p. 182: ROLLIER & TRIBOLET (284). *B. cf. pentagonalis*, columnals from Callovian (p. 21, pl. iii); *B. pernaldensis* (p. 23); *B. stockhornensis*, probably var. of *B. subteres* (p. 22): LISSAJOUS (195). *B. subteres*; HUENE (166) pp. 351, 352, 354, 357, 359: KOPY (177) p. 214: roots figd., perhaps only fixed in young, also meristic variation, see II, B, ii, d, 1; LISSAJOUS (195) p. 22, pl. iii. *B. subteroides*; op. cit. p. 20.  
†*Barrandeocrinidae*, diagnosis; BATHER (19) p. 166.  
†*Barrandeocrinus*, incl. ? *Cylicocr.* Miller, discussed; loc. cit. and fig. lxxx.  
†*Barycrinus*; BATHER (19) p. 179.  
*Bathyrinidae*, diagnosis; op. cit. p. 185.  
*Bathyrinus*, incl. *Ilycr.*, morphology and systematic position discussed; op. cit. p. 186, figg. xviii, xxiii, liii, cv, cvi. *B. sp.* non descr., Antarctic; CHUN (63) pp. 226, 486.  
†*Batocrinidae*, diagnosis, genera discussed; BATHER (19) p. 167.  
†*Batocrinoidea*, Sub-order, diagnosis, divided into families *Tanao-*, *Xeno-*, *Carmo-*, *Barrandeo-*, *Coelo-*, *Bato-*, *Periecho-crinidae*; op. cit. p. 164.  
†*Batocrinus*; op. cit. p. 167, fig. lxxxii. *B. prodigialis* agrees with type specimens of *Actinocr. yandelli* Shumard; KLEM (173) p. 174. *B. rotadentatus*, specimen figured by Wachsmuth & Springer, N. Amer. Camerata, pl. xlv, fig. 7, is *B. calvini*, but figg. 6a, 6b, named *Lobocrinus aequibrachiatus*, are this sp.; ROWLEY (290) p. 271. *B. (?) springeri*, n. sp., top of Lower Burlington Limestone, Louisiana, Mo.; op. cit. (289) p. 72, pl. ii.  
†*Belemnocrinidae*, diagnosis; BATHER (19) p. 152.  
†*Belemnocrinus*, discussed, *B. florifer*, *B. typus*, stems; loc. cit.  
†*Beyrichocrinus*; op. cit. p. 168. *B. humilis*, structure discussed, Waagen & Jahn's account criticised, probably *Monocyclic*, and perhaps a *Periechocrinid*; BATHER (21) pp. 103, 105, fig. 1.  
†*Blairocrinus*, vide *Actinocrinus*.  
†*Bohemioocrinus*, discussed; BATHER

- crinus* ?), *pulverens* (corrected to *pulvereus*) structure discussed, apparently a *Carpocr.* or *Desmidocr.*; BATHER (21) p. 106, fig. 2: vide etiam *Vletavici*.
- †*Botryocrinidae*, diagnosis; BATHER (19) p. 179.
- †*Botryocrinus*, incl. *Sicyocrinus*; loc. cit. and figg. iii, xiii, xxi, xcvi: name must yield to *Sicyocrinus* because the latter appears on the previous page "und somit auf Priorität Anspruch hat"; JAEKEL (167) p. 373. *B. polyzo*, redescri.; WELLER (348) p. 66, pl. xiv.
- Bourgueticrinidae*, diagnosis, genera descr.; BATHER (19) p. 193.
- †*Bourgueticrinus*, descr.; op. cit. p. 194. *B. sp.*; SCHMIDT (301) p. cxcviii. *B. sp.*, in Eocene; REIS (278) p. 84. *B. aequalis*, original drawings; BATHER (19) p. 193, fig. cxv: as zonal fossil; ROWE (288) p. 344. *B. ? didymus*, columnals, distinguished from *B. cornutus*; OPPENHEIM (251) p. 77, pl. xviii. *B. ellipticus*; DEECKE (82) pp. 42, 55, 71: DIBLEY (92) p. 493: and other forms, figured but not named, as zonal fossils; ROWE (288) pp. 297, 304, 344, pl. viii. *B. goniaster* [sic] in Eocene; REIS (278) p. 84.
- †*Brachiocrinus*, vide *Herpetocrinus*.
- †*Brahmacrinus*, n. g., "an annectant form, uniting the *Melocrinidae* and *Platycrinidae*," with genotype *B. ponderosus*, n. sp., Carboniferous Limest., Lancashire and Yorkshire [?], types in Oxford Mus. and Brit. Mus.; SOLLAS (312), p. 264, pl. xvi, and text-figg. 1, 2: in opinion of Wachsmuth & Springer and of the speaker is only a *Platycrinus*; BATHER in discussion.
- †*Briarocrinus*; BATHER (19) p. 162.
- †*Bursacrinus*, incl. *Synphocrinus*, discussed; op. cit. p. 180.
- †*Cacubocrinus*, vide *Dolatocrinus*.
- †*Cactocrinus*, discussed; BATHER (19) p. 170, fig. xlv. *C. obesus* is from middle of Upper Burlington at White Ledge, Mo.; ROWLEY (291) p. 251.
- Cainocrinus*, vide *Isocrinus*.
- Calamocrinus*, descr.; BATHER (19) p. 192, figg. xxiv, cxiii, cxiv.
- †*Calathocrinus* Hall, vide *Teleocrinus*.
- †*Calathocrinus* Meyer, vide *Encrinus*.
- †*Calceocrinidae*, diagnosis, with diagrams of genera; BATHER (19) p. 147.
- †*Calceocrinus*, incl. *Cheirocr.* Salter, *Pendulocr.*, ? *Deltacr.*; op. cit. p. 148, figg. lx, lxi. *C. barrisi*; NORTON (248) p. 451.
- †*Caleidocrinus*, discussed; BATHER (19) p. 202: discussed, an early representative of *Flexibilia impinnata*, approaching the ancestor of *Ichthyocr.* and *Tarocr.* (p. 111); *C. barrandei*, probably syn. of *C. multiramus* (p. 112); *C. multiramus* (p. 111, fig. 5): BATHER (21).
- †*Callawayocrinus*, vide *Dactylocrinus* Quenst.
- †*Callicrinus*, incl. *Cryptodiscus*; BATHER (19) p. 164, fig. lxxvii. *C. bifurcatus*, n. sp., Niagaran, Joliet, Ill., perhaps belongs to *C. longispinus* (p. 125, pl. viii); *C. bilobus* Weller (as *Cryptodiscus*), redescri. (p. 125, pl. x); *C. cornutus*, redescri. (p. 118, pl. viii); *C. corrugatus* Weller (as *Cryptodiscus*), includes the "?????" S. A. Miller, 1892, redescri. (p. 123, pl. xi); *C. desideratus*, n. sp., Niagaran, Racine, Wis. (p. 122, pls. ix, x, xi); *C. digitatus* Weller (as *Cryptodiscus*), redescri. (p. 124, pls. ix, xi); *C. hydei* Weller (as *Cryptodiscus*), redescri. (p. 124, pls. viii, ix, x); *C. longispinus*, n. sp., Niagaran, Joliet, Ill., allied to *C. murchisonianus* (p. 119, pl. viii); *C. pentangularis*, n. sp., Niagaran, Bridgeport, Ill. (p. 120, pl. viii): WELLER (348).
- †*Calocrinus*, perhaps a *Cupressocr.*; BATHER (19) p. 202.
- †*Calpiocrinus*, diagnosis; op. cit. p. 189, fig. cx. *C. ? bohemicus* Waagen & Jahn is the root of a crinoid comparable with *Lichenocr.*; BATHER (21) p. 112, fig. 6.
- †*Calycanthocrinus*, origin of pararadials discussed; BATHER (19) p. 160, fig. lxiii.

- †*Camarocrinus*, vide *Scyphocrinus* Zenker. *C. saffordi*; SCHUCHERT (303) p. 280.
- †*Camerata* W. & Sp. (pp. 139, 140); Order of *Monocyclica*, diagnosis and discussion (p. 159); Order of *Dicyclica*, diagnosis, divided into families, *Reteo-*, *Dimero-*, *Lumptero-*, *Rhodo-crinidae* (p. 198): BATHER (19).
- †*Campanulites*; op. cit. p. 202.
- †*Campocrinus*; op. cit. p. 159.
- †*Canistrocrinus*, vide *Glyptocrinus*.
- †*Carabocrinidae*, diagnosis; BATHER (19) p. 172.
- †*Carabocrinus*, orals and ambulacra; loc. cit. and figg. v, lxxxiv. *C. sp.*; WINCHELL & ULRICH (357) p. cxxiii.
- †*Carduocrinus*, vide *Lophocrinus*.
- †*Carolicrinus barrandei*, apparently a large sp. of *Abacocrinus* (q.v.); BATHER (21) p. 107.
- †*Carpocrinidae*, diagnosis, genera described; BATHER (19) p. 166.
- †*Carpocrinus*, incl. *Phoenicocr.*, *Abracr.*, *Habrocr.*, *Pionocr.*, and ? *Leptocr.*, discussed; loc. cit. and fig. lxxix.
- †*Caryophyllites*, vide *Eugeniocrinus*.
- †*Cassianocrinus*, vide *Encrinus*.
- †*Castanocrinus*, vide *Melocrinus*.
- †*Castocrinus*; BATHER (19) p. 148, fig. lxi.
- †*Catillocrinidae*, diagnosis, relation to *Pisocrinidae*, description of genera; op. cit. p. 150.
- †*Catillocrinus*, incl. *Nematocr.*, discussed; loc. cit. and fig. lxii.
- Cenocrinus*, vide *Isocrinus*.
- †*Centriocrinus*; BATHER (19) p. 162.
- †*Centrocrinus* Austin, vide *Platycrinus*.
- †*Centrocrinus* Worthen, ? syn. of *Gazacr.*; BATHER (19) p. 202.
- †*Ceramocrinus*, vide *Gasterocomus*.
- †*Ceriocrinus* Desor, vide *Millericrinus*.
- †*Ceriocrinus* White, vide *Delocrinus*.
- †*Cheirocrinus* Hall non Eichw., vide *Euchirocrinus*.
- †*Chelocrinus*, vide *Encrinus*.
- †*Chicagocrinus*, n. g. of *Eucalyptocrinidae* (p. 126), with genotype *C. ornatus*, n. sp., Bridgeport, Ill. (p. 127, pl. vii), also *C. inornatus*, Joliet, Ill. (p. 128, pl. vii), both Niagara Limestone; WELLER (348).
- †*Chladocrinus*, vide *Pentacrinus*.
- †*Cicerocrinus*, n. g. of *Pisocrinidae* [i.e. *Triacrinidae* Jaek.], with genotype *C. elegans*, n. sp., Wenlock Limest., Dudley?; SOLLAS (312) p. 267, pl. xvi, text-fig. 3: arm-branching shows it to be "the climax of the *Heterocrinidae*"; BATHER in discussion: "a link uniting the two families"; SOLLAS in added footnote, p. 270: vide etiam *Lagarocr.*
- †*Cladocrinus* Austin, vide *Taxocrinus*.
- †*Cladoidea* Jaekel; BATHER (19) p. 141.
- †*Cleioocrinus*, referred provisionally to *Flexibilia impinnata*; op. cit. p. 191.
- †*Clematocrinus*, vide *Hapalocrinus*.
- †*Clidochirus*, descr.; BATHER (19) p. 188.
- †*Clonocrinidae*, diagnosis; op. cit. p. 162.
- †*Clonocrinus* Oehl., vide *Melocrinus*.
- †*Clonocrinus* Quenst., incl. *Corynbocr.* (q.v.); BATHER (19) p. 162, fig. lxxvi.
- †*Closterocrinus*; op. cit. p. 173.
- Coadunata* Miller; op. cit. p. 138.
- †*Coccocrininae*, diagnosis, discussion of genera; op. cit. p. 156.
- †*Coccocrinus*, incl. *Ambacr.*, discussed; loc. cit.
- †*Codiocrinidae*, diagnosis; BATHER (19) p. 176.
- †*Codiocrinus*; op. cit. p. 177, fig. xciii.
- †*Codonocrinus*; op. cit. p. 202.

- +*Coelocrinus*; BATHER (19) p. 180. *C. ventricosus*, criticism of Wachsmuth and Springer's figure showing pores; BATHER (22) p. 311.
- +*Coelocrinidae*, diagnosis, genera discussed; BATHER (19) p. 167.
- +*Coelocrinus* M. & W., incl. *Sphaerocr.* M. & W., and *Aorocr.*; loc. cit. and fig. lxxxi.
- +*Coelocrinus* Salter, vide *Rhaphanocrinus*.
- Comaster*, vide *Actinometra*.
- Comatula*, vide *Antedon*: para, vide *Actinometra*.
- Comatulina*, syn. of *Antedon*; BATHER (19) p. 202.
- Comaturrella*, syn. of *Antedon*; loc. cit.
- +*Compsocrinus*; op. cit. p. 165, fig. lxxviii.
- +*Condylocrinus*, discussed; op. cit. p. 201.
- +*Conocrinus* Troost; BATHER (19) p. 202.
- Conocrinus* d'Orb., syn. of *Rhisocr.* (q.v.); op. cit. p. 194. †*C. pyriformis* [sic] = *C. thorensi* d'Arch., distinguished from *C. suessi* = *C. thorensi* Menegh.; OPPENHEIM (251) p. 78. †*C. segmensis*, dorsal cups descr. and measured; NOELLI (243) p. 12, pl. i.
- +*Cophinus*, its meaning; BATHER (19) p. 202.
- +*Cordylocrinus*, discussed; op. cit. p. 156. *C. plumosus* and *C. (?) ramulosus*; SCHUCHERT (303) p. 279.
- +*Coronocrinus*, vide *Hadrocrinus*.
- +*Corymbocrinus*, vide *Clonocrinus* Queest. *C. chicagocensis*, n. sp., Niagaran, various loca. near Chicago, type from Bridgeport; WELLER (348) p. 100, pl. iv. *C. (?) macropetalus*; SCHUCHERT (303) p. 272. *C. niagarensis*, n. sp., Niagaran, Chicago; WELLER (348) p. 101, pl. iv.
- +*Cosmocrinus*; BATHER (19) p. 179.
- +*Costata* Jaekel; op. cit. p. 141.
- Costata* Müller; op. cit. p. 138.
- +*Cotylederma*, incl. *Cotylecr.*; op. cit. p. 198.
- +*Cotyledonocrinus*, vide *Dichocrinus*.
- +*Crateriocrinus* (*Symbathocrinus*) *encrinoides* De Kon., Calcareous sandstone, Kirkcudbright; PEACH (259) p. 65. [Is this meant for *Graphiocr. encrinoides* Kon. & Le Hon?] ]
- +*Cremacrinus*, vide *Euchirocrinus*. *C.* sp.; WINCHELL & ULRICH (357) p. cxxiii.
- Crinoidea*, sens. restr. Jaekel; BATHER (19) p. 141.
- +*Cromyocrinidae*, diagnosis, genera discussed; op. cit. p. 180.
- +*Cromyocrinus*; BATHER (19) p. 181, fig. c.
- +*Crotalocrinidae*, diagnosis, systematic position discussed; op. cit. p. 176.
- +*Crotalocrinus*, incl. *Anthocr.*; loc. cit. and figg. l, xcii. *C. americanus*, n. sp., Niagaran, Bridgeport, Ill.; WELLER (348) p. 143, pl. xiv. *C. pulcher*, description and drawing of a tegmen; BATHER (19) p. 176, fig. xcii.
- +*Crumenaocrinus*; op. cit. p. 202.
- +*Cryptodiscus* discussed and all spp. referred to *Callicrinus* (q.v.); WELLER (348) p. 121.
- +*Ctenocrinus*; BATHER (19) p. 161.
- +*Culicocrinus*, vide *Cylicocrinus* Müller.
- +*Cypressocrinidae*, diagnosis, genera discussed; BATHER (19) p. 177.
- +*Cypressocrinus*, incl. *Halocr.* and *Cypellocr.*, descr.; loc. cit. and fig. xciv. *C. impressus* McCoy, incl. *Poteriocr. maccoyanus*; PEACH (260) p. 222: [this is usually referred to *Hydreionocr.*]
- +*Cupulocrinus*, discussed; BATHER (19) p. 202.
- +*Cyathidium*, incl. *Micropocr.*; op. cit. p. 198.
- +*Cyathocrinidae*, diagnosis, genera described; op. cit. p. 173.
- +*Cyathocrinoidea*, Sub-order, diagnosis, division into Families *Carabo-*, *Palaeo-*, *Euspiro-*, *Sphaero-*, *Cyatho-*, *Petalo-*, *Crotalo-*, *Codia-*, *Cypressocrinidae*, and *Gasterocomidae*; op. cit. p. 172 et seqq.

- †*Cyathocrinus*, redescr.; BATHER (19) p. 173, ff. xxvi, xxxix, xliii, lxxxix. *C. capillaris* Phill. is *Gissocr.*; BATHER in Review of WELLER (348). *C. cora*, redescr.; WELLER (348) p. 62, pl. xiv: description of arms does not agree with drawings; BATHER in Review. *C. multibrachiatus*, original drawing; BATHER (19) p. 174, fig. lxxxix. *C. ornatissimus* Hall, probably *Mariacr.*; WHITFIELD & HOVEY (351) p. 197. *C. ramosus*, a figure of Angelin's copied; WELLER (348) fig. 14: the specimen is *C. longimanus*; BATHER in Review. *C. cf. ramosus* Schloth., columnals, cirri, compared with *C. kattaensis* [of course not a *Cyathocrinus*]; FRECH (124) p. 285. *C. turbinatus*, n. sp., Niagaran, Chicago; WELLER (348) p. 65, pl. xiv. *C. vanhorni*, redescr., abnormal anal; op. cit. p. 64, pl. xiv. *C. cf. virgalensis*, columnals; FRECH (124) p. 285.
- †*Cyclocrinus* [i.e. *Acrochordocr.* q.v.] sp.?; LISSAJOUS (195) p. 17. *C. sp.*; STRUEBIN (324) pp. 335, 337. *C. sp.*; KILIAN & LORY (170) p. 52. *C. areolatus*; LISSAJOUS (195) p. 17. *C. macrocephalus*; KOBY (177) p. 196: columnals, some curiously tapering, one bored by *Saxicava*; LISSAJOUS (195) p. 16, pl. iii. *C. rugosus*; op. cit. p. 16.
- †*Cylicocrinus* Miller non Müller, vide *Barrandocrinus*.
- †*Cylicocrinus* Müller (seu *Culicocrinus*), discussed; BATHER (19) p. 156.
- †*Cypellocrinus*, vide *Cupressocrinus*.
- †*Cyphocrinus*, incl. *Hyptiocr.*; BATHER (19) p. 199: WELLER (348) p. 76. *C. chicagocensis*, n. sp., Niagaran, Bridgeport, Ill.; loc. cit. pl. i.
- †*Cupressocrinus* = *Cupressocrinus*; BATHER (19) p. 202.
- †*Cyrtidocrinus*; op. cit. p. 188.
- †*Cyrtocrinus*, vide *Torynocrinus*.
- †*Cystocrinus*; BATHER (19) p. 202, fig. i.
- †*Cytocrinus*, vide *Melocrinus*.
- †*Dactylocrinidae*, diagnosis; BATHER (19) p. 189.
- †*Dactylocrinus* Slad., vide *Scytalecrinus*.
- †*Dactylocrinus* Quenst., incl. ? *Aristocr.* seu *Callawaycr.*, diagnosis; BATHER (19) p. 189, fig. cx.
- †*Dadocrinus*; op. cit. p. 182.
- †*Daemonocrinus*; op. cit. p. 202.
- Decacnemus*, syn. of *Antedon*; loc. cit.
- †*Decadactylocrinus*; loc. cit.
- †*Decadocrinus*; BATHER (19) p. 180. *D. grandis*, pores in anal sac; SPRINGER (314) p. 144, pl. xvi. *D. tumidulus* M. & G., incl. *D. grandis* W. & Sp. pars, pores in anal tube; op. cit. p. 139, pl. xvi.
- Decameros*, syn. of *Antedon*; BATHER (19) p. 202.
- †*Delocrinus*, incl. *Ceriocr.* White; op. cit. p. 180, fig. c. *C. craigi*, redescr., measurements; BEEDE (29) p. 32, pl. vi. *C. hemisphericus*, type at Washburn Coll.; op. cit. p. 34, pl. vi. *C. missouriensis*, incl. *C. hemisphericus* Mill. & Gurl. non Shum., redescr., measurements; op. cit. p. 35, pl. vi. *C. ? monticulatus*, redescr., measurements; op. cit. p. 33, pl. vii.
- †*Deltacrinus*, vide *Calceocrinus*.
- †*Dendrocrinidae*, diagnosis; BATHER (19) p. 178.
- Dendrocrinoidea*, Sub-order, diagnosis, divided into Families *Dendro-*, *Botryo-*, *Lopho-*, *Scaphio-*, *Scytale-*, *Graphio-*, *Cromyo-*, and *En-crinidae*, which constitute Grade *Distincta*, and *Pentacrinidae*, *Uinta-crinidae*, *Marsupitidae*, and *Bathycrinidae*, which constitute Grade *Articulata*; BATHER (19) p. 178 et seq.
- †*Dendrocrinus*; op. cit. p. 179, figg. xxvi, xcvi. *D. sp.*; WINCHELL & ULRICH (357) p. cxxiii. *D. cambriensis*, allied to *Iocr.*; BATHER (19) p. 146.
- †*Desmidocrinus*; op. cit. p. 166.
- †*Diabolocrinus*; op. cit. p. 200.

- †*Diamenocrinus*; BATHER (19) p. 200.
- †*Dichocrinus*, incl. *Cotyledonocrinus*; op. cit. p. 159.
- Dicyclia*, Sub-class, diagnosis, and classification under Orders *Inadunata*, *Flexibilia*, and *Camerata*; op. cit. p. 171 et sqq.
- †*Dimerocrinidae*, diagnosis; BATHER (19) p. 198.
- †*Dimerocrinus*, incl. *Glyptaster*, *Thysanocr.*, and *Eucr.*; loc. cit. fig. cxxiii.
- D. decadactylus*, original drawing; op. cit. p. 199, fig. cxxiii.
- †*Dimorphicrinus*, syn. of *Orophocrinus*, vide IV, H; op. cit. p. 202.
- †*Distinctu*, Grade of *Dendrocrinoidea*; op. cit. p. 178.
- †*Dizygocrinus*; BATHER (19) p. 168.
- †*Dolatocrinidae*, diagnosis; op. cit. p. 164.
- †*Dolatocrinus*, incl. *Cacabocr.*; loc. cit. fig. xlv.
- †*Dolichocrinus*, incl. *Tetanocr.*, discussed; op. cit. p. 197.
- †*Doliolocrinus*; BATHER (19) p. 202.
- †*Donacirinus*; loc. cit.
- †*Dorycrinus*, discussed; op. cit. p. 167. *D. gouldi*, specimen figured by Keyes, Missouri Geol. Surv. iv, pl. xxiii, fig. 1, is *D. mississippiensis*; ROWLEY (290) p. 271. *D. missouriensis*, v. sub *Eretmocrinus nodosus*. *D. pentalobus*, n. sp., base of Upper Burlington Limest., Louisiana, Mo., and White Ledge, Mo.; ROWLEY (289) p. 72, pl. ii.
- †*Echinocrinus* = *Archaeocidaris*, vide IV, c; BATHER (19) p. 202.
- †*Ectenocrinus*, discussed; op. cit. p. 146, fig. lviii.
- †*Edriocrinus*, referred provisionally to *Flexibilia impinnata*; op. cit. p. 191, fig. cxii. *E. becraftensis*, n. sp., Oriskany beds of Becraft Mt., N. Y., calyces; CLARKE (67) p. 62, pl. ix. *E. pocilliformis*; SCHUCHERT (303) p. 279. *E. sacculus*; op. cit. pp. 292, 313; WELLER (349) p. 43.
- †*Edwardocrinus*, vide *Platycrinus*.
- †*Emperocrinus*, discussed; BATHER (19) p. 202: possible syn. of *Archaeocr.*; WELLER (348) p. 89.
- †*Enallocrinus*; BATHER (19) p. 176, fig. xcii.
- †*Encrinidae*, diagnosis; op. cit. p. 181.
- †*Encrinus*; op. cit. p. 202.
- †*Encrinus*, incl. *Chelocr.*, ? *Calathocr.*, *Flabellocr.*, ? *Cassianocr.*, ? *Tramatochr.*, *Porocr.* Dittm.; op. cit. p. 182. *E. cassianus*; BROILI (48) p. 369; O. GORDON (132) p. 340, and (249) p. 309; KOSSMAT (184) p. 95; ZITTEL (368) p. 349. *E. granulatus*; BROILI (48) p. 369; O. GORDON (132) p. 340 and (249) p. 309; MARIANI (223) p. 1254; ZITTEL (368) p. 349. *E. liliiformis*, reconstruction of Muschelkalk sea-floor, showing 3 individuals of this as in life (fig. 2 on p. 17), with popular description of the species (p. 20); FRAAS (123). *E. liliiformis*?; DOUVILLE (94) p. 595. *E. cf. liliiformis*, fine for size and preservation; GEYER (126) p. 120. *E. cf. liliiformis*, Beyrich from Timor, 1864, perhaps same genus as *Cyathocr. virgalensis* [which is probably not a *Cyathocrinoid* at all]; FRECH (124) p. 285. *E. silesiacus* Quenst., discussed; KOKEN (182) p. 213. *E. varians*; BROILI (48) p. 369; O. GORDON (132) p. 340, and (249) p. 309; ZITTEL (368) p. 349.
- †*Entrochus*; BATHER (19) p. 202. *E. rotiformis*, n. sp., Trias of Kweichow, China, columnals only; KOKEN (182) p. 212, pl. x.
- †*Epactocrinus*, vide *Gasterocoma*.
- †*Eretmocrinus*; BATHER (19) p. 167. *E. expansus* Keyes, is a *Cactocrinus*; ROWLEY (291) p. 251. *E. nodosus*, n. sp., base of Upper Burlington Limest., Louisiana, Mo., incl. specimen figd. as *Dorycrinus missouriensis* by Wachsmuth & Springer, Revision Palaeocrin. iii, pl. iv, fig. 5; ROWLEY (289) p. 73, pl. ii.
- †*Erisocrinus*; BATHER (19) p. 181, fig. c. *E. megalobrachius*, redescr., measurements; BEEDE (29) p. 37, pl. vii. *E. typus*, variations from type in a specimen at Washburn College; op. cit. p. 39, pl. vi.

- †*Eucalyptocrinidae*, diagnosis, genera described; BATHER (19) p. 163.
- †*Eucalyptocrinus*, incl. *Hypanthocrinus*, endothecal laminae not hydrospires; op. cit. p. 164. *E. asper*, n. sp., Niagaran, Bridgeport and Hawthorn, Ill., allied to *E. elrodi* and distinguished from *E. caelatus*; WELLER (348) p. 110, pl. v. *E. caelatus*; WILLIAMS (352) p. 36. *E. cornutus*; NORTON (248) p. 438. *E. crassus*, redescri., incl. *E. chicagensis* Winch. & Mar., and *E. constrictus* Hall; WELLER (348) p. 105, pl. v. *E. depressus*, redescri.; op. cit. p. 114, pl. vii. *E. egani*, redescri.; op. cit. p. 108, pl. vii. *E. inornatus*, n. sp., Niagaran, Bridgeport and Hawthorn, Ill.; op. cit. p. 115, pl. vi. *E. magnus?* or perhaps a large *E. asper*, descr.; op. cit. p. 116, pl. vi. *E. nodulosus*, n. sp., Niagaran, Bridgeport, Ill., perhaps incl. some specimens referred by Hall to *E. crassus*; op. cit. p. 109, pl. vii. *E. obconicus*, redescri.; loc. cit. pl. vii. *E. ornatus*, redescri.; op. cit. p. 111, pl. vi. *E. rotundus*, redescri., probably young of another sp.; op. cit. p. 113, pl. v. *E. turbinatus*, redescri.; op. cit. p. 107, pl. vi.
- †*Euchiocrinus*; incl. *Cheirocr.* Hall, *Cremacr.* (q.v.), and *Proclivocr.*; BATHER (19) p. 148, fig. lxi.
- †*Eucladocrinus*, evolution of; op. cit. p. 158, fig. lxxi.
- Eucrinioidea* Zittel; op. cit. p. 139.
- †*Eucrinus*, vide *Dimerocrinus*.
- †*Eudesicrinidae*, diagnosis, doubtfully referred to *Flexibilia pinnata*; BATHER (19) p. 198.
- †*Eudesicrinus*; loc. cit.
- Eudiocrinus*, incl. *Ophiocr.* Semper; op. cit. p. 195. *E.* sp. nondescr., 1289 metres, Somali coast; CHUN (63) p. 488. *E. indivisus*; PFEFFER (267).
- †*Eugeniocrinidae*, diagnosis, genera descr.; BATHER (19) p. 197.
- †*Eugeniocrinus*, incl. *Symphytocrinus*, *Caryophyllites*, descr.; loc. cit. and fig. cxi. *E.* sp. (pp. 15, 33), *E. (Hemicr.) astieri* (pp. 47, 52); KILIAN & LORY (170). *E. caryophyllatus*; LISSAJOUS (195) p. 2. *E. (Hemicr.) geveyi*; KILIAN & LORY (170) p. 52. *E. hagenowi*; DEECKE (82) pp. 55, 71. *E. heberti*; KILIAN & LORY (170) p. 33. *E. hoferi*; LISSAJOUS (195) p. 2. *E. moussoni*; HUENE (166) p. 356; LISSAJOUS (195) p. 2.
- †*Eupachycrinus*; BATHER (19) p. 181, fig. c. *E. magister*; BEEDE (29) p. 40, pl. vi. *E. tuberculatus*? = n. sp.? GIRTY (130) pp. 542, 575.
- †*Euryalecrinus*, vide *Taxocrinus*.
- †*Euryocrinus*; BATHER (19) p. 190.
- †*Euspirocrinidae*, diagnosis; op. cit. p. 173.
- †*Euspirocrinus*; loc. cit. and figg. xxxviii, lxxvii.
- †*Eutrochocrinus*; BATHER (19) p. 167.
- †*Extracrinus*, vide *Pentacrinus*.
- †*Fistulata* of W. & Sp. (p. 139), of Jaekel (p. 141); BATHER (19).
- †*Flabellocrinus*, vide *Encrinus*.
- Flexibilia* Zittel; BATHER (19) p. 140: Order of *Dicyclica*, diagnosis, divided into two Grades, *Impinnata* and *Pinnata*; op. cit. p. 187.
- †*Forbesiocrinus* Ang., vide *Lithocrinus*.
- †*Forbesiocrinus* de Kon. non W. & Sp., vide *Taxocrinus*. *F. agassizi*, either *Sagenocr.* or new genus of *Sagenocrinidae*; BATHER (19) p. 190.
- †*Gannarocrinus*, incl. *Sclerocrinus*; op. cit. p. 197.
- Ganymeda*, syn. of *Antedon*; op. cit. p. 203.
- †*Gasterocoma*, incl. *Epactocr.* and *Ceramocr.*; op. cit. p. 177.
- †*Gasterocomidae*, diagnosis; loc. cit.
- †*Gastrocrinus*; BATHER (19) p. 179, fig. xvii.
- †*Gaurocrinus*; op. cit. p. 203.
- †*Gazacrinidae*, diagnosis as Fam. of *Flexibilia Impinnata*; op. cit. p. 188.
- †*Gazacrinus*, name preferred to *Idiocrinus*; WELLER (348) p. 78: inol.



- Idiocr.*, placed doubtfully among *Flexibilia Impinnata*; BATHER (19) p. 188, fig. cix [this fig. quite possibly misinterprets the original drawings, which are obscure]. *G. major*, n. sp., Niagaran, Hawthorn, Ill.; WELLER (348) p. 78, pl. iii. *G. minor*, n. sp., Niagaran, Bridgeport, Ill.; op. cit. p. 80, pl. iii.
- †*Gennaeocrinus*, descr.; BATHER (19) p. 169.
- †*Geocoma* Fraas, vide *Antedon*.
- †*Geocrinus*, vide *Periechocrinus*.
- †*Gilbertsocrinus*, incl. *Ollacr.*, *Goniasteroidocr.*, and *Trematocr.*; BATHER (19) p. 201, fig. cxxvii.
- †*Gissocrinus*, descr.; op. cit. p. 175, figg. viii, ix, xli, xc.
- †*Glenotremites*, syn. of *Antedon*; op. cit. p. 203.
- †*Glyptaster*, vide *Dimerocrinus*.
- †*Glyptocrinidae*, diagnosis; BATHER (19) p. 160.
- †*Glyptocrinus*, incl. *Canistrocr.* and *Pycnocr.*; op. cit. p. 161, fig. xxv. *G.* sp.; WINCHELL & ULRICH (357) p. cxxiii. *G. basalis*; MALAISE (218) p. 806, and (219) p. 205. *G. plumosus*; FOERSTE (112) p. 72 (see III, B, iv, g).
- †*Gnathocrinus fusiformis*, syn. of *Millericrinus pratti*; BATHER (19) p. 203.
- †*Gnorimocrinus*, redescri.; op. cit. p. 189.
- Goldfussia* Norman; op. cit. p. 203.
- †*Goniasteroidocrinus*, vide *Gilbertsocrinus*.
- †*Goniocrinus*; BATHER (19) p. 179.
- †*Gothocrinus*; loc. cit.: armlets perhaps branch; JAEKEL (167) p. 373.
- †*Grammocrinus*; BATHER (19) p. 203.
- †*Graphiocrinidae*, diagnosis; op. cit. p. 180.
- †*Graphiocrinus*; loc. cit. and fig. c: vide etiam *Crateriocrinus*.
- †*Guetlardicrinus*; BATHER (19) p. 192.
- †*Gymnocrinus*; op. cit. p. 197.
- †*Habrocrinus*, vide *Carpocrinus*.
- †*Hadrocrinus*, incl. ? *Coronocrinus*, fusion of primibrachs; BATHER (19) p. 164. *H. polydactylus*; SCHUCHERT (303) p. 280.
- †*Halocrinus*, vide *Cupressocrinus*.
- †*Halophenix*, syn. of *Pentacrinus*; BATHER (19) p. 203.
- †*Hapalocrinus*, incl. *Agriocr.*, *Thallocr.*, *Clematocr.*, redescri.; op. cit. p. 156, fig. lxix.
- †*Haplocrinidae*, diagnosis; op. cit. p. 151.
- †*Haplocrinus* (seu *Aplocr.*), analysis, anal pore; op. cit. pp. 126, 151, fig. lxiv.
- †*Harmocrinus*, vide *Stelidiocrinus*.
- †*Helmintholithus entrochus*; BATHER (19) p. 203. *H. portentosus*, syn. of *Pentacrinus*; loc. cit.
- †*Hemicrinus*, vide *Torynocrinus*: spp. etiam sub *Eugeniocr.*
- †*Herpetocrinus*, incl. *Ophiocr.* Charlesw., *Myelodactylus* Ang. & ?Hall, and *Brachioocr.* Hall, redescri.; BATHER (19) p. 146, fig. lix: stem sharply pentagonal; ZITTEL & EASTMAN (369) p. 153: certainly not; BATHER in Review. *H. nodosarius*; SCHUCHERT (303) p. 279. Vide etiam *Myelodactylus*.
- Hertha*, syn. of *Antedon*; BATHER (19) p. 203.
- †*Heterocrinidae*, diagnosis, and description of genera; op. cit. p. 145.
- †*Heterocrinus*, incl. *Stenocr.*, discussed; op. cit. p. 146, fig. lviii.
- †*Hexacrinidae*, diagnosis; op. cit. p. 158.
- †*Hexocrinus*; loc. cit. and fig. lxxii.
- Hibernula*, vide *Antedon*.
- †*Holocrinus*; BATHER (19) p. 182.
- Holopodidae*, diagnosis; op. cit. p. 197.
- Holopus*; loc. cit. and figg. xxxiv, cxxi.
- †*Homalocrinus*, diagnosis; op. cit. p. 189.

- †*Homocrinus*; BATHER (19) p. 179, fig. xcvi. *H. proboscidalis* [sic]; SCHUCHERT (303) pp. 292, 313. *H. scoparius*; op. cit. p. 279.
- †*Hoplocrinus*, incl. *Baerocr.*; BATHER (19) p. 145, fig. lvii.
- †*Hybocrinidae*, diagnosis; BATHER (19) p. 145.
- †*Hybocrinus*, incl. *Indianocr.*; loc. cit. and figg. vi, xxxvi, lvii.
- †*Hybocystis*, redescri., relations to *Crinoidea*, referred to *Hybocrinidae*; op. cit. pp. 95, 145, fig. i.
- †*Hydreionocrinus*; op. cit. p. 180. *H. sp.*; PEACH (260) p. 223. *H. globularis*; loc. cit. *H. impressus*, vide sub *Cypressocrinus*. *H. kansasensis* (p. 42), *H. subsinuatus* (p. 43); BREDE (29) pl. vii.
- †*Hydriocrinus*, vide *Scaphiocrinus*.
- Hyocrinidae*, description based on *Hyocrinus bethellianus*, which is discussed; BATHER (19) p. 153, fig. lxxvii.
- Hyocrinus* sp. nondescr., 4636 metres, Antarctic, about 60° E., 65° S., text-fig.; CHUN (63) pp. 226, 486.
- †*Hypanthocrinus*, vide *Eucalyptocrinus*.
- †*Hyperocrinus* (seu *Uperocrinus*), incl. *Lobocr.*; BATHER (19) p. 168.
- †*Hypocrinus*; op. cit. p. 178.
- Hyponome*, vide *Antedon*.
- †*Hyptiocrinus*, vide *Cyphocrinus*.
- †*Hystriocrinus*, vide *Arthracantha*.
- †*Ichthyocrinidae*, diagnosis, genera discussed; BATHER (19) p. 187.
- †*Ichthyocrinus*; op. cit. p. 188, fig. cviii. *I. bohemicus*; BATHER (21) p. 114. *I. laevis*; WILLIAMS (352) p. 36. *I. subangularis*, redescri., incl. *I. corbis* Winch. & Mar., and S. A. Miller; WELLER (348) p. 146, pl. xv.
- †*Icosidactylocrinus*; BATHER (19) p. 203.
- †*Idiocrinus*, vide *Guzacrinus*.
- Ilycrinus*, vide *Bathycrinus*.
- †*Impinnata* P. H. Carp. (p. 140); as Grade of *Flexibilia*, diagnosis, division into Families *Ichthyo-*, *Gaza-*, *Taxo-*, *Dactylo-*, and *Sagenocrinidae* (p. 187 et sqq.): BATHER (19).
- Inadunata* W. & Sp. (p. 139), as Order of *Monocyclica*, diagnosis and discussion (p. 144), as Order of *Dicyclica*, diagnosis, relations of Families, divided into Sub-orders *Cyathocrinoidea* and *Dendrocrinoidea* (p. 171 et sqq.): BATHER (19).
- Inarticulata* Miller; BATHER (19) p. 138.
- †*Indianocrinus*, vide *Hybocrinus*.
- †*Iocrinus*, redescri.; BATHER (19) p. 145, figg. xxvi, xxviii, lviii.
- †*Irregularia* Carpenter & Etheridge; op. cit. p. 139.
- Isis*, vide *Isocrinus* Meyer.
- †*Isocrinus* Phill., vide *Taxocrinus*.
- Isocrinus* Meyer, incl. *Isis* pars, *Cainocr.*, *Picteticr.*, *Cenocr.*, *Neocr.*, and *Pentacr.* pars, descr.; BATHER (19) p. 182, figg. xi, xvi, xvii, xxiii, ci, cii: for spp. vide sub *Pentacr.*
- Kallispungia*, larva of *Antedon*; op. cit. p. 203.
- †*Koninckocrinus*, syn. of *Torynocr.* and *Acrochordocr.*; loc. cit.
- †*Lagarocrinus* [syn. of *Cicerocr.* q.v.], n. g. of *Triocrinidae* with genotype *L. osiliensis*, n. sp., Upper Oesel beds, Oesel, co-types at St Petersburg Academy (p. 486 and text-fig. 1, 2), *L. anglicus*, n. sp., Lower Ludlow beds, Presteign, Radnorshire, S. Wales, holotype in Mus. f. Naturkunde, Berlin (p. 486, no fig.), *L. scanicus*, n. sp., Beyrichia Limestone, Scania, Sweden, holotype in Riksmuseum, Stockholm (p. 486, figg. 3, 4, 6, 7), *L. tenuis*, n. sp., Upper Ludlow beds, Ludlow, holotype in Brit. Mus. (p. 487, no fig.); JAEKEL (168).
- †*Lahusenocrinus*, discussed; BATHER (19) p. 200.
- †*Lampteroocrinidae*, diagnosis, genera discussed; op. cit. p. 199.
- †*Lampteroocrinus*, descr.; op. cit. p. 199, fig. cxxiv. *L. ? dubius*, n. sp., Niagaran, Lemont and Joliet, Ill., perhaps n. g. because arms un-

- branched; WELLER (348) p. 84, pl. ii: but arms not preserved BATHER in Review. *L. inflatus*, redescr., large specimen figd. (p. 81 pl. ii); *L. robustus*, n. sp., Niagara, Romeo, Lemont, and Joliet, Ill (p. 82, pl. ii); *L. ? subglobosus*, n. sp., Niagara, Bridgeport and Hawthorn, Ill. (p. 83, pl. iii): WELLER (348).
- +*Larvata* Jaekel; BATHER (19) p. 141.
- +*Larviformia* W. & Sp.; op. cit. pp. 139, 140.
- +*Laubeocrinus*, systematic position; op. cit. p. 170. *L. barrandei*, structure discussed, referred to *Monocylica Camerata*, compared with the abnormality of *Phillipsocr.*; BATHER (21) p. 108, fig. 3.
- +*Lecanocrinus*; BATHER (19) p. 188. *L. sp.*; WELLER (349) p. 33. *L. waukoma* Hall (as *Cyathocr.*) redescr., incl. *L. pusillus* Winch. & Marston Hall; WELLER (348) p. 148, pl. xv.
- +*Lecythocrinus*; BATHER (19) p. 177.
- +*Lecythocrinus*; op. cit. p. 175.
- +*Leptocrinus*, vide *Carpocrinus*.
- +*Lithocrinus*, incl. *Forbesiocr.* Ang., diagnosis; BATHER (19) p. 189, fig. cx.
- +*Lobocrinus*, vide *Hyperocrinus*. *L. aequibrachiatus*, v. sub *Batocr. rotadentatus*; ROWLEY (290).
- +*Lobolithus*, vide *Scyphocrinus* Zenker.
- +*Lophocrinidae*, diagnosis; BATHER (19) p. 179.
- +*Lophocrinus*, incl. ? *Carduocrinus*; loc. cit.
- +*Lyriocrinus*, incl. *Marsupiocr.* Hall; BATHER (19) p. 200. *L. melissa*, redescr.; WELLER (348) p. 91, pl. iii. *L. cf. melissa*; WILLIAMS (352) p. 55.
- +*Macarocrinus*; BATHER (19) p. 166, fig. lxxix.
- +*Macrocrinus*; op. cit. p. 168.
- +*Macrostylocrinus*; op. cit. p. 162. *M. obconicus*, n. sp., Bridgeport, Ill. (p. 95, pl. iv); *M. semiradiatus* Hall (as *Saccocr.*) redescr., perhaps incl. *M. fasciatus* Hall (p. 94, pl. iv); *M. striatus*, redescr. from Chicago area, more slender than original Indiana specimens, those from Racine figd. by Hall are not this sp. (p. 93, pl. iv); *M. subglobosus*, n. sp., Bridgeport, Ill. (p. 96, pl. iv): all Niagaran; WELLER (348).
- +“*Majesticrinus*” [nom. nud. or ? err. pro *Megistocrinus*], Burlington, Iowa; ORCUTT (252).
- +*Mariocrinus*, incl. *Zenkericrinus*; BATHER (19) p. 161, fig. lxxiv. *M. melocrinoides*, vide sub *Zenkericr.* *M. obpyramidalis*, vide sub *Melocrinus*. *M. plumosus*, *M. ramosus* and *M. stoloniferus*; SCHUCHERT (303) p. 279.
- +*Marsipocrininae*, diagnosis; BATHER (19) p. 156.
- +*Marsupocrinus*, name preferred to *Marsupiocr.* Phill. non Blainv., incl. *Cypellocr.* vel *Cupellaocr.* Shum. non Steininger, discussed; loc. cit. and fig. lxx. *M. chicagoeensis*, n. sp., Niagara, Chicago; WELLER (348) p. 138, pl. xiv. *M. tentaculatus*; SCHUCHERT (303) p. 279.
- +*Marsupiocrinus* Blainv., vide *Marsupites*.
- +*Marsupiocrinus* Phill., vide *Marsupocr.*
- +*Marsupiocrinus* Hall, vide *Lyriocrinus*.
- +*Marsupites*, incl. *Sitularia* and *Marsupiocr.* Blainv.; BATHER (19) p. 185, fig. xvii, civ. *M. ornatus*; SCHUCHERT (297) pp. 418, 420. *M. testudinarius*; SHEPPARD (305) p. 67: as zonal fossil; ROWE (288) pp. 296, 301, 333, 348.
- +*Marsupitidae*, diagnosis; BATHER (19) p. 184.
- +*Mastigocrinus*; op. cit. p. 179, fig. xlviii.
- +*Medusacrinus* Austin [syn. of *Platycr.*]; op. cit. p. 203.
- +*Megistocrinus*, descr.; op. cit. p. 168, fig. xlii. *M. nodosus*; NORTON (248) p. 451. Vide etiam *Majesticr.*
- +*Melocrinidae*, diagnosis; BATHER (19) p. 161.

- †*Melocrinoidea*, Sub-order, diagnosis, divided into families *Glyptocrinidae*, *Melocrinidae*, *Patelloocrinidae*, *Clonocrinidae*, *Eucalyptocrinidae*, and *Dolatocrinidae*; BATHER (19) p. 160.
- †*Melocrinus*, incl. *Astrocr.* Conr., *Turbinocr.*, *Castanocr.*, *Cytocr.*, and *Clonocr.* Oehl., relations to *Mariacr.*; op. cit. p. 161, fig. lxxiv. *M. nobilissimus*; SCHUCHERT (303) p. 279. *M. obpyramidalis*, redescri.; WELLER (348) p. 97, pl. iii: evidence of fixed brachials suggests it is *Mariacr.*; BATHER in Review. *M. pachydactylus*, and *M. paucidactylus*; SCHUCHERT (303) p. 279. *M. verneuli*, vide *Thysanocr. pentangularis*.
- †*Merocrinus*; BATHER (19) p. 178, fig. xcvi. *M. sp.*; WINCHELL & ULBICH (357) p. cxxiii.
- †*Mesocrinus*, descr.; BATHER (19) p. 194.
- †*Mespilocrinus* Kon.; op. cit. p. 188.
- †*Mespilocrinus* Quenst.; vide *Acrochordocr.*
- †*Metacrinus*; BATHER (19) p. 183, fig. ci. *M. sp. nondescr.*, Nias Channel; CHUN (63) p. 362.
- †*Microcrinus*, syn. of *Atelecrinus*; BATHER (19) p. 203.
- †*Micropocrinus*, vide *Cyathidium*.
- †*Millericrinus*, incl. *Ceriocr.* Desor and *Pomatocr.*, descr.; BATHER (19) p. 191, figg. xvii, lii. *M. sp.*; KILIAN & LORY (170) pp. 33, 37. *M. sp. indet.*, stem-fragments; also a root of another (p. 15, pl. iii); *M. sp. indet.*, Kimmeridgian (p. 16); *M. affinis*, variations from type (p. 12); LISSAJOUS (195). *M. alternatus*, vide *M. dudressieri*. *M. beaudouini*, vide *M. rotiformis*. *M. caraboeui*?, descr., differences from type perhaps due to greater age (p. 6, pl. i); *M. cf. charpyi* (p. 12); *M. convexus* (p. 10); *M. dilatatus*?, a radial (p. 13); *M. dudressieri*, discussed, probably restr. to specimens from Lower Rauracian, perhaps = *M. alternatus* (p. 10, pl. ii); LISSAJOUS (195). *M. echinatus*; KOBY (177) p. 209. *M. cf. elatus*, stem-fragments (p. 15, pl. iii); *M. escheri*, columnals figd., ? 2 spp. (p. 11, pl. ii); *M. etalloni* (p. 12); *M. goupilianus* (p. 8); LISSAJOUS (195). *M. granulatus*; KOBY (177) p. 196; LISSAJOUS (195) p. 5. *M. cf. granulatus*, stem-fragments descr.; loc. cit. and pl. i. *M. horridus*; KOBY (177) p. 209; LISSAJOUS (195) p. 11. *M. knorri*, discussed, probably restr. to specimens of Birmensdorf age (pp. 9, 10, pl. ii); *M. nodotianus* (p. 12); *M. perrauti*, n. sp., allied to *M. belnensis*, Lower Rauracian of Lacroix near Tournus (p. 13, pl. iii); *M. pilleti*, root figd. (p. 7, pl. i); LISSAJOUS (195). *M. pratti*, incl. *Gnathocr. fusiformis*; BATHER (19) p. 203. *M. regularis* (p. 11); *M. rotiformis*, also a specimen apparently identical with *M. beaudouini*, which may therefore be a syn. of this sp. (p. 8, pl. i); *M. thiollerei*, the types are not Oxfordian but from zone of *Cidaris florigemma* (p. 11); LISSAJOUS (195).
- †*Missouricrinus*, doubtfully referred to *Belemnocrinidae*; BATHER (19) p. 153.
- †*Mitocrinus*, discussed; op. cit. p. 203.
- †*Monocyclica*, Sub-class, diagnosis, and classification under Orders *Inadunata*, *Adunata*, and *Camerata*; op. cit. p. 144 et seq.
- †*Mycocrinus*, redescri.; op. cit. p. 150, fig. lxi.
- †*Myelodactylus*, name preferred to *Herpetocrinus* (q. v.), and *M. bridgeportensis*, redescri.; WELLER (348) p. 69, pl. xv.
- †*Myrtillocrinus*, incl. *Ancyrocrinus*; BATHER (19) p. 177, fig. li.
- †*Nanocrinus*; op. cit. p. 177.
- †*Nematocrinus*, vide *Catillocrinus*.
- †*Neocrinoidea* Wachsmuth; BATHER (19) p. 139.
- †*Neocrinus*, vide *Isocrinus*.
- †*Nipterocrinus*, referred to *Ichthyocrinidae*; BATHER (19) p. 188.
- †*Ohioocrinus*, discussed; op. cit. p. 148.

- †*Ollacrinus*, vide *Gilbertocrinus*.  
 †*Oncocrinus*, vide *Pycnosaccus*.  
 †*Onychocrinus*, descr., arin-branching; BATHER (19) p. 190, figg. xvii, cx.  
 †*Ophiocrinus* Ang., vide *Streptocrinus*.  
 †*Ophiocrinus* Charlesworth, vide *Herpetocrinus*.  
 †*Ophiocrinus* Salter; BATHER (19) p. 201.  
     *Ophiocrinus* Semper, vide *Eudiocrinus*.  
 †*Orthocrinus*; BATHER (19) p. 198.  
 †*Ottawocrinus*; op. cit. p. 178, fig. xcvi.  
 †*Pachyantodon*; op. cit. p. 203.  
 †*Pachycrinus*; loc. cit.  
 †*Pachylocrinus*, vide *Woodocrinus*. *P.* sp.; JAEKEL in FRECH (124) p. 204, fig. 45 [This name is syn. of *Woodocr.*, but the drawing is not like spp. of that genus.]  
 †*Pachyocrinus*; BATHER (19) p. 203.  
 †*Palaeocrinidae*, diagnosis, genera descr.; op. cit. p. 172.  
 †*Palaeocrinoides* Wachsmuth; op. cit. p. 139.  
 †*Palaeocrinus*, redescri.; op. cit. p. 172, fig. lxxxv. *P.* sp.; WINCHELL & ULRICH (357) p. cxxiii.  
 †*Parisocrinus*; BATHER (19) p. 173, fig. xxvi. *P. subramosus*, Miller & Gurley [sub *Poteriocr.*], pores in anal sac; SPRINGER (314) p. 145, pl. xvi: difficulty of regarding this as *Parisocr.*; BATHER (22) p. 307.  
 †*Patelliocrinidae*, diagnosis, relations discussed; BATHER (19) p. 161.  
 †*Patelliocrinus*; op. cit. p. 162, fig. lxxxv.  
 †*Pendulocrinus*, vide *Calceocrinus*.  
*Pentacrinidae*, diagnosis, genera discussed; BATHER (19) p. 182.  
*Pentacrininae*, diagnosis, genera discussed; loc. cit.  
*Pentacrinus* Auctt. non Blumenbach, vide *Isocrinus*. †*Pentacr. s. str.*, incl. *Polycerus*, *Extracr.*, ?*Chladocr.*, descr.; BATHER (19) p. 182 fig. ci. †*Extracr.* [i.e. *Pentacr.*] sp. l columnals; LISSAJOUS (195) p. 24. †*P.* sp. columnals (1*Balanocr.* or *Extracr.*) from Laila Mts.; BONNET (43) p. 226. †*P.* [= *I.*] sp.; CARTER (57). †*P.* [= *I.*] sp.; KILLAN & LORI (170) pp. 51, 56. †*P.* [= *I.*] sp.; STILLE (319) pp. 8, 10, 12. †*P.* [= *I.*] sp.; UHLIG (334) p. 9. *P.* [i.e. *I.*] sp. as zonal fossil; ROWE (288) pp. 313, 317. *P.* [i.e. *I.*] sp. nondescr., 750 and 1280 metres, Siberut Strait, L. DOEDERLEIN photo. but no description; CHUN (63) pp. 364, 486. *P.* [i.e. *I.*] *agassizi*; BRYDONE (51) p. 12: incl. *P. kloedeni* as cirrals; DEECKE (82) pp. 71, 72. †*P.* [i.e. *I.*] *amblyscalaris*; HUENE (166) p. 355; LISSAJOUS (195) p. 20. †*Cainocr.* [i.e. *Isocr.*] *andreae*; HUENE (166) p. 347. †*P.* [= *I.*] *asteriscus*; DARTON (79) p. 388: crown discovered; KNIGHT (174) p. 386: columnals described, and compared with *P. subangularis*; LOGAN (205) pp. 113, 119, pl. xxv. †*Extracr.* [i.e. *P.*] *babeaui*; LISSAJOUS (195) p. 24. †*P.* [= *I.*] *bajocensis*; op. cit. p. 19; STRUEBIN (324) pp. 335, 337; GREPPIN (138) p. 191. †*P.* aff. *bajociensis*, stem-fragment, Callovian or Bajocian, Franz Josef Land; POMPECKJ (268) pp. 51, 120, pl. i. †*P.* [= *I.*] *basilitiformis*; LISSAJOUS (195) p. 18; STILLE (319) p. 13: var. *subrotunda* Quenst., and var. ?, Mte. Domaro; BETTONI (34) pp. 8, 9, text-fig. †*P.* [i.e. *I.*] *berthae*, vide *P. gastaldii*. †*P.* [i.e. *I.*] *browni*; BRYDONE (51) p. 12; DEECKE (82) pp. 55, 71. †*P.* [= *I.*] *bryani*; CLARK (66) p. 339. †*Extracr.* [i.e. *P.*] *buchogauensis*; LISSAJOUS (195) p. 24; HUENE (166) p. 362. †*P.* [= *I.*] *cingulatus*; LISSAJOUS (195) p. 19. †*P.* [= *I.*] *crista-galli*; loc. cit.; GREPPIN (138) p. 190; STRUEBIN (324) pp. 335, 337. †*Extracr.* [i.e. *P.*] *dargniewi*; LISSAJOUS (195) p. 24. †*P.* [i.e. *I.*] *desori*; HUENE (166) p. 365. †*P.* [i.e. *I.*] *gastaldii*, incl. *P. miocenicus* Lor. and *P. berthae* Nicolas, columnals redescri., list of localities; NOELLI (243) p. 5, pl. i. †*P.* [= *I.*] cf. *geisingensis*; LISSAJOUS (195) p. 19. †*P.*

- [=I.] *gracilis*; WALTON (346). †*P.* [=I.] *jurensis*; LISSAJOUS (195) p. 18. †*P.* [=I.] *guirandi*; op. cit. p. 20. †*P. kloedeni*, vide *P. agassizi*. †*P. lorioli*, n. sp., Upper Helvetian, Piedmont, columnals only [apparently *Balanocr.*]; NOELLI (243) p. 10, pl. i. †*P.* [=I.] *mieryensis*; LISSAJOUS (195) p. 18. †*P. miocenicus*, vide *P. gastaldii*. †*P.* [i.e. I.] *neocomiensis*; KILIAN & LORY (170) p. 52. †*P.* [=I.] *nicoleti* (p. 19), †*P.* [=I.] *oceanii* (p. 18), †*P.* [=I.] *oxyscalaris* (p. 19), †*P.* [=I.] *pellati* (p. 20); LISSAJOUS (195). †*P.* [i.e. *Balanocr.*] *pentagonalis*; HUENE (166) p. 355. †*P.* [=I.] *praetextus*; LISSAJOUS (195) p. 18. †*P.* [≠I.] *propinquus*; BROILLI (48) p. 369; O. GORDON (132) p. 340 and (249) p. 309. †*P.* [=I.] *psilonoti*; LISSAJOUS (195) p. 17; ENGEL (106) p. 240; STILLE (319) p. 7. †*P.* [=I.] *rollieri*; LISSAJOUS (195) p. 18. †*P.* [=I.] *scalaris*; STILLE (319) p. 13. †*P.* [i.e. *Balanocr.*] *subbasaltiformis*; STOLLEY (320) pp. 110, 113. †*P.* [=I.] *subulcatus*; LISSAJOUS (195) p. 17; STILLE (319) pp. 13, 14. †*P.* [≠I.] *tirolensis*; O. GORDON (132) p. 340, and (249) p. 309. †*P.* [=I.] *tuberculatus*; LISSAJOUS (195) p. 17; STILLE (319) pp. 9, 10. †*P.* [=I.] *wirtembergicus*; GREPPIN (138) p. 202. †*P.* [=I.] *wyville-thomsoni*, 1425 metres, Azores; RICHARD (282) p. 78.
- †*Pentagonites*; BATHER (19) p. 203.
- †*Periechocrinidae*, diagnosis, genera discussed; op. cit. p. 168.
- †*Periechocrinus*, incl. *Geocr.*, *Saccocr.*, *Pyxidocr.*, †*Trochocr.*, †*Pradocr.*, discussed; loc. cit. *P. chicagoensis*, n. sp., Niagaran, Bridgeport & Joliet, Ill. (p. 131, pl. xiii); *P. egani*, redescr., distinguished from *P. infelix* (p. 136, pl. xiii); *P. infelix*, redescr. (p. 134, pl. xiii); *P. marcouanus*, redescr. (p. 131, pl. xii); *P. necis*, redescr. (p. 133, pl. xiii); *P. urniformis*, incl. *P. pyriformis* S. A. M., redescr. (p. 135, pl. xii); WELLER (348).
- †*Periglyptocrinus*; BATHER (19) p. 161.
- †*Persichodonus magnus*, syn. of *Adelocr. hystrix*; op. cit. p. 203.
- †*Petalocrinidae*, diagnosis; op. cit. p. 175.
- †*Petalocrinus*, reconstruction; op. cit. p. 175, fig. xci.
- †*Petinocrinus*; op. cit. p. 203.
- Phanogenia*, vide *Actinometra*.
- †*Phialocrinus* Eichw.; BATHER (19) p. 203.
- †*Phialocrinus* Trautsch.; op. cit. p. 181, fig. c. *P. magnificus*, redescr., measurements; BEEDE (29) p. 36, pl. vi.
- †*Phillipsocrinus*; BATHER (21) p. 108: systematic position discussed; BATHER (19) p. 170.
- †*Philocrinus*, vide *Woodocrinus*.
- †*Phimocrinus*, discussed, *P. jouberti*, bisected radials; BATHER (19) p. 152.
- †*Phoenicocrinus*, vide *Carpocrinus*.
- †*Phyllocrinus*; BATHER (19) p. 197. *P.* sp. †, stem-fragment; LISSAJOUS (195) p. 3, pl. i.
- †*Physetocrinus*; BATHER (19) p. 170.
- Phytocrinus*, vide *Antedon*.
- Picteticrinus*, vide *Isocrinus*.
- Pinnata* P. H. Carp. (p. 140), as Grade of *Flexibilia*, diagnosis, division into families *Apiocrinidae*, *Bourgueticrinidae*, *Antedonidae*, *Atelecrinidae*, *Actinometridae*, *Thaumatocrinidae*, *Eugeniocrinidae*, *Holopodidae*, and *Eudeisocrinidae* (pp. 191 et seq.); BATHER (19).
- †*Pionocrinus*, vide *Carpocrinus*.
- †*Pisocrinidae* [*Triacrinidae* Jaek.], diagnosis and description of genera; BATHER (19) p. 149: emend. diagnosis, incl. *Pisocr.*, *Triacr.*, and *Cicerocr.*; SOLLAS (312) p. 270: variation of arm-structure, its limits in this fam. preclude admission of *Cicerocr.*; BATHER in discussion.
- †*Pisocrinus*, relations to allied genera; BATHER (19) p. 149, fig. lxii: rediagnosed; SOLLAS (312) p. 270: united with *Triacrinus*, wh

- name has priority; JAEKEL (168) p. 482. *P. sp.* [*? pilula*], variation in basals; SOLLAS (312) p. 268, text-fig. 4. *P. flagellifer* [syn. of *pilula*]; ZITTEL & EASTMAN (369) p. 135, fig. 237: incorrectly oriented; BATHER in Reviews of this and of WELLER (348). *P. milligani* Mill. & Gurl. is syn. of *P. quinquelobus*; BATHER in Review of WELLER (348). Vide etiam *Triacrinus*.
- †*Platycrinidae*, diagnosis, discussion of genera, divided into sub-families, *Cococrininae*, *Marpocrininae*, *Platycrininae*; BATHER (19) p. 156.
- †*Platycrininae*, diagnosis; op. cit. p. 157.
- †*Platycrinus*, incl. *Centrocr.*, *Pleurocr.*, *Edwardsocr.*, descr., ontogeny; loc. cit. and figg. xlix, lxxi. *P. aff. arenosus*; PEACH (260) p. 223. *P. (?) dubius*, n. sp., Niagaran, Bridgeport, Ill., of strikingly Inadunate appearance; WELLER (348) p. 140, pl. xiv: probably one of the *Cococrininae*; BATHER in Review. *P. huntsvillae*, young; BATHER (19) p. 158, fig. lxxi. *P. trigintidactylus*; PEACH (260) p. 223.
- †*Platysphaerites*; BATHER (19) p. 203.
- †*Pleurocrinus*, vide *Platycrinus*.
- †*Plicatocrinidae*, diagnosis, genera described; BATHER (19) p. 153.
- †*Plicatocrinus*, descr.; loc. cit. and fig lxxvi.
- †*Polycerus*, vide *Pentacrinus*.
- †*Polypeltes*; BATHER (19) p. 162.
- †*Pomatocrinus*, vide *Millericrinus*.
- †*Porocrinus* Dittm. = *Traumatocr.*, vide *Encrinus*.
- †*Porocrinus* Bill., redescrib.; BATHER (19) p. 172, fig. lxxxvi. *P. sp.*; WINCHELL & ULRICH (357) p. cxxiii. *P. shawi*, n. sp., Trenton Limest., Silliman's Fossil Mt., Baffin Land; SCHUCHERT (302) p. 155, pl. xii. *P. smithi*, partial reconstruction; BATHER (19) p. 173, fig. lxxxvi.
- †*Poteriocrinus*; op. cit. p. 180, fig. xcix. *P. sp.*, similar to Salt-range sp., columnals; FRECH (124) p. 285. *P. crassus* et aff. *crassus*; PEACH (260) p. 223. *P. doris*, deep folds in anal sac, but no pores observed; SPRINGER (314) p. 149. *P. dudleyensis* Austin, not a *Cyathocr.* as supposed by WELLER (348); BATHER in Review. *P. nuciformis* et aff. *nuciformis*; PEACH (260) p. 223. *P. quenstedti* Golowkinsky; ENDERLE (105) p. 93, pl. viii. *P. tenuis* and *P. aff. ventricosus*; PEACH (260) p. 223.
- †*Pradocrinus*, vide *Periechocrinus*.
- †*Proclivocrinus*, vide *Euchirocrinus*.
- Promachocrinus*, discussed; BATHER (19) p. 195.
- †*Proteuryale*; op. cit. p. 203.
- Pterocoma*, syn. of *Antedon*; loc. cit.
- †*Pterotocrinus*, incl. *Asterocr.* Lyon, discussed; op. cit. p. 159.
- †*Ptychocrinus*; op. cit. p. 198.
- †*Pycnocrinus*, vide *Glyptocrinus*.
- †*Pycnosaccus*, incl. *Oncocr.*; BATHER (19) p. 187, fig. cvii. *P. americanus*, n. sp., Niagaran, Hawthorn, Ill., also, lapsu calami, as *P. ornatus*; WELLER (348) p. 149, pl. xv.
- †*Pyxidocrinus*, vide *Periechocrinus*.
- Regularia* Carpenter & Etheridge; BATHER (19) p. 139.
- †*Reteocrinidae*, restricted to *Reteocr.*, diagnosis; op. cit. p. 198.
- †*Reteocrinus*, descr.; loc. cit. and fig. cxxii.
- †*Rhadinocrinus*; BATHER (19) p. 179.
- †*Rhaphanocrinus*, incl. *Coelocr.* Salter; op. cit. p. 200.
- †*Rhipidocrinus*; op. cit. p. 201.
- Rhizocrinus*, descr.; op. cit. p. 194, figg. x, xliii, xlix, cxvi: vide etiam *Conocrinus*. *R. sp.* nondescr., 1644–1668 metres, Somali coast, L. DOEDERLEIN photo, but no description; CHUN (63) pp. 487, 488. *R. rawsoni*, fine specimen, 1425 metres, Azores; RICHARD (282) p. 78.

- +*Rhodocalix*; BATHER (19) p. 203.
- +*Rhodocrinidae*, diagnosis, genera discussed; op. cit. p. 199.
- +*Rhodocrinus*; op. cit. p. 201.
- +*Rhopalocrinus*, referred provisionally to *Flexibilia Impinnata*, possibly *Dicyclica Inadunata*; BATHER (19) p. 191.
- +*Saccocoma*, incl. *Euryale*, habits; op. cit. p. 154, fig. lxviii.
- +*Saccocomidae*, diagnosis; op. cit. p. 154.
- +*Saccocrinus*, vide *Periechocrinus*. *S. semiradiatus*, vide sub *Macrostylocr.*
- +*Sagenocrinidae*, diagnosis, and *Sagenocrinus*; BATHER (19) p. 190, fig. xxiva.
- +*Sampsonocrinus*, perhaps an abnormal *Actinocr.*; op. cit. p. 170.
- +*Scaphiocrinidae*, diagnosis; BATHER (19) p. 180.
- +*Scaphiocrinus*, incl. *Hydrocr.* and *Abrotocr.*; loc. cit. and fig. xxvi. *S.* ? sp.; FOX (121) p. 146, and (122) p. 346. *S. arboreus*, pores in anal sac; SPRINGER (314) p. 147, pl. xvi. *S. hemisphaericus*; PROSSER (272) p. 163. *S. missouriensis* (p. 144), *S. swallovi* (p. 143), *S. unicus* (p. 142): pores in anal sac; SPRINGER (314) pl. xvi. *S.* ? *washburni*, n. sp., Upper Coal Measures, Osage Coal, Topeka, Kansas, type at Washburn College, "on the top of the sac there seems to be a madreporite" [if so it is not a *Poteriocrinid*, as supposed]; BEEDE (28) p. 21, pl. v, fig. 2: redescrip., measurements, BEEDE (29) p. 27, pl. vi.
- +*Schizocrinus*, incl. ? *Scyphocr.* Hall; BATHER (19) p. 161.
- +*Sclerocrinus*, vide *Gammarocrinus*.
- +*Scoliocrinus*; BATHER (19) p. 178.
- +*Scyphocrinus* Hall non Zenker, vide *Schizocrinus*.
- +*Scyphocrinus* Zenker, incl. *Camarocr.* and *Lobolithus*; BATHER (19) p. 161: its systematic position in *Melocrinidae*, diagnosis (p. 114), morphology of fixed brachials and pinnulars, their relations to the tegmen (pp. 115-119, fig. 7), tegmen, stem, and roots (p. 119); BATHER (21). *S. elegans*, var. ? *polonica* [? nom. nud.]; GUERICH (146) pp. 368, 373. *S. excavatus* Waag. & Jahn is identical with *S. elegans* Zenker, but *S. excavatus* Schloth. is not specifically determinable, the action of W. & J. criticised but accepted "for the sake of concord" (p. 115): var. *schlotheimi*, tertibrachs and fixed pinnulars (p. 117, fig. 7); BATHER (21).
- +*Scytalecrinidae*, diagnosis; BATHER (19) p. 180.
- +*Scytalecrinus*, incl. *Dactylocr.* Slad.; loc. cit. *S.* sp. indet. (p. 143), *S. hoveyi* (p. 145), *S. validus* (p. 141), *S. van hornei* (p. 145): pores in anal sac; SPRINGER (314) pl. xvi.
- +*Semiarticulata* Miller; BATHER (19) p. 138.
- +*Shumardocrinus*, syn. of *Steganocr. concinnus*; op. cit. p. 203.
- +*Sicyocrinus*, vide *Botryocrinus*.
- +*Siphonocrinus*, descr.; BATHER (19) p. 199. *S. nobilis*; NORTON (248) p. 438: redescrip., variation in interbrachial areas, iBr resting on BB as in *Rhodocrinidae*; WELLER (348) p. 86, pl. ii.
- +*Sitularia*, vide *Marsupites*.
- +*Solacrinus*, syn. of *Antedon*; BATHER (19) p. 203.
- +*Solanocrinus*, vide *Antedon*.
- +*Sphaerocrinidae*, diagnosis; BATHER (19) p. 173.
- +*Sphaerocrinus* M. & W., vide *Coelocrinus*.
- +*Sphuerocrinus* Roemer; BATHER (19) p. 173. *S.* sp.; FOX (121) p. 147 and (122) p. 351.
- +*Sphenocrinus*; BATHER (19) p. 203.
- +*Spyridiocrinus*, vide *Trybliocrinus*.
- +*Steganocrinus*; BATHER (19) p. 170.
- +*Stelidiocrinus*, incl. ? *Harmocr.*; op. cit. p. 161, fig. lxxv.
- +*Stemmatocrinus*; op. cit. p. 181.
- +*Stenocrinus*, vide *Heterocrinus*.



- †*Stephanocrinidae*, diagnosis; BATHER (19) p. 145.
- †*Stephanocrinus*, incl. *Rhombifera mira* (p. 145), redescr., relations †*Blastoidea* and *Crinoidea* (pp. 96, 145, fig. ii); op. cit. *S. angulatus* GRANT (133). *S. osgoodensis*; WELLER (348) p. 151, pl. xv.
- †*Stereocrinus*; BATHER (19) p. 164. *S. triangulatus*; NORTON (34) p. 451.
- †*Stomatocrinoidea* Wachsmuth; BATHER (19) p. 139.
- †*Stortingocrinus*, "angles of the columnar canal radial in position [erroneous statement, taken from Wachsmuth & Springer; the canal is round, as descr. by Schultze]; op. cit. p. 152.
- †*Streptocrinus*, incl. *Ophiocr.* Ang.; op. cit. p. 179: the "false pinnules of Bather owe their position to the fusion of brachials; JAEKEL (16) p. 373.
- †*Strophocrinus*; BATHER (19) p. 172.
- †*Strotocrinus*, discussed; op. cit. p. 170. "*Strocotinus*" [= *Strotocrinus* Burlington, Iowa; ORCUTT (252).
- †*Stylocrinus*, discussed; BATHER (19) p. 152.
- †*Sycocrinus*:—*S. anapeptamenos* is a *Hypocrinus*; *S. clausus* is a *Lagenicrinus*; *S. jacksoni* is a *Cryptocrinus*, vide IV, G: op. cit. p. 203.
- †*Symbathocrinidae*, diagnosis, genera discussed; op. cit. p. 152.
- †*Symbathocrinus*; loc. cit. and fig. lxxv: vide etiam *Crateriocrinus*.
- †*Symphytocrinus*, vide *Eugeniocrinus*.
- †*Syneroocrinus*, descr., probably incl. *Taxocr. nobilis* Kon.; *S. incurvus* original drawings: BATHER (19) p. 190, fig. cxi.
- †*Synphocrinus*, vide *Bursocrinus*.
- †*Syringocrinus*, is stem of *Dendrocystis*, vide IV, G; BATHER (19) p. 203.
- †*Talarocrinus*; op. cit. p. 159.
- †*Tanaocrinidae*, diagnosis, and *Tanaocrinus*, discussed; op. cit. p. 164 fig. lxxviii.
- †*Taxocrinidae*, diagnosis, genera discussed; op. cit. p. 188.
- †*Taxocrinus*, incl. *Isocr.* Phill., *Cladocr.* Aust., *Euryalecr.*, *Fortesioecr.* Kon., diagnosed; op. cit. p. 189, figg. xxxvii, cx. *T. nobilis* Kon., vide *Syneroocrinus*.
- †*Technocrinus*; BATHER (19) p. 163. *T.* sp. nondescr., Monterey formation, Maryland, *T. andrewsi*, *T. sculptus*, *T. spinulosus*, *T. striatus*; SCHUCHERT (303) pp. 292, 313. *T. striatus* Hall, probably = *T. andrewsi*; WHITFIELD & HOVEY (351) p. 199.
- †*Teleiocrinus*, incl. *Caluthocr.* pars Hall, discussed; BATHER (19) p. 170.
- †*Tesselata* Zittel; op. cit. p. 139.
- †*Tessellata* Müller; loc. cit.
- †*Testacea* Müller; op. cit. p. 138.
- †*Tetanocrinus*, vide *Dolichocrinus*.
- †*Tetracrinus* Austin; BATHER (19) p. 203.
- †*Tetracrinus* Münster, origin as a sport; op. cit. p. 153: Jaekel's views as to basals misrepresented; BATHER in Review of ZITTEL & EASTMAN (369). *T. moniliformis*; LISSAJOUS (195) p. 3.
- †*Tetramerocrinus*, syn. of *Melocr.* or *Mariacr.*; BATHER (19) p. 204.
- †*Thalamocrinus*, discussed; loc. cit.
- †*Thalocrinus*, vide *Hapalocrinus*.
- †*Thaumatoocrinidae*, diagnosis, and *Thaumatoocrinus*; BATHER (19) p. 196 fig. cxix.
- †*Thenarocrinus*; op. cit. p. 179, fig. xcvi.
- †*Thiolliericrinus*, discussed; op. cit. p. 195. *T. algarbiensis*; CHOFFAT (62) p. 185. *T. flexuosus*, original figure; *T. ribeiroi*, reconstruction: BATHER (19) p. 195, fig. cxvii.
- †*Thylacocrinus*, descr., *T. vanniotti*, original drawing; BATHER (19) p. 200 fig. cxix.
- †*Thysanocrinus*, vide etiam *Dimerocrinus*. *T. egani*, redescr., possibly only

- young of another sp. (p. 74); *T. occidentalis*, redescr., variety from Bridgeport (p. 73); *T. pentangularis*, redescr., incl. *Melocr. verneuili* Hall, abnormal anal area (p. 70): WELLER (348) pl. i.
- †*Tormocrinus*; BATHER (19) p. 197.
- †*Torynocrinus*, incl. *Cyrtocr.* and ? *Hemicr.*; loc. cit.
- †*Traumatocrinus*, vide *Encrinus*.
- †*Trematocrinus*, vide *Gilbertocrinus*.
- †*Triacrinus*, incl. *Trichocrinus*, relations to *Pisocr.*; BATHER (19) p. 149, fig. lxii: incl. *Pisocr.*, the spp. form two series, the *pilula* type and the *pocillum* type (p. 482), *T. pilula*, analysis of cup, variation in position of small basal (p. 483, fig. 5); JAEKEL (168). Vide etiam *Pisocr.*
- †*Trianisites*; BATHER (19) p. 204.
- †*Tribrachiocrinus*, incl. *Pentadia*, pars; op. cit. p. 181, fig. c.
- †*Trichocrinus*, vide *Triacrinus*.
- †*Trigonocrinus*; BATHER (19) p. 197.
- †*Triplaricrinus* = *Hexacr. pateraeformis*; op. cit. p. 204.
- Trochita*; loc. cit.
- †*Trochocrinus*, vide *Periechocrinus*.
- †*Trybliocrinus*, incl. *Spyridiocrinus*; BATHER (19) p. 163.
- †*Turbinocrinus*, vide *Melocrinus*.
- †*Uintacrinidae*, diagnosis; BATHER (19) p. 183.
- †*Uintacrinus*, infrabasals; loc. cit. and fig. ciii. *U. sp.* nondescr., England, as zonal fossil; ROWE (288) pp. 298 (text-fig.), 333, 347. *U. socialis*, tegmen; SPRINGER (315): distrib., mode of occurrence, slab with 220 calyces, of diameters 20 to 70 mm., mode of exhibition; BEECHER (27). *U. westfalicus*; SCHLUETER (297) p. 418.
- †*Ulocrinus*; BATHER (19) p. 181, fig. xxix.
- †*Uperocrinus*, vide *Hyperocrinus*.
- †*Vusocrinus*; BATHER (19) p. 179.
- †*Vletavicrinus*, discussed; op. cit. p. 204. *V. haueri* Waagen & Jahn's account criticised, doubtless a Monocyclic Camerate, and probably a Batocrinoid, why not a syn. of *Bohemiococr.*, or even of *B. pulvereus*?; BATHER (21) p. 109, fig. 4.
- †*Woodocrinus*, incl. *Philocr.* and *Pachylocr.*; BATHER (19) p. 180.
- †*Xenocrinidae*, diagnosis, with description of genera; op. cit. p. 165.
- †*Xenocrinus* Jahn, probably *Mariacrinus*; op. cit. p. 204.
- †*Xenocrinus* Miller; op. cit. p. 165, fig. lxxviii.
- †*Zeacrinus*; op. cit. p. 180, fig. xcix. *Z. ? mucrospinus*; PROSSER (272) pp. 153, 155, 157, 161, 165. *Z. ? robustus*, n. sp., Upper Coal Measures, Kansas City, type at Kansas Univ.; BEEDE (28) p. 22, pl. v, fig. 1: redescr., measurements, type at Kansas Univ.; BEEDE (29) p. 29, pl. vi.
- †*Zenkericrinus melocrinoides*, is a *Mariacr.* (q.v.); BATHER (21) p. 111.
- †*Zophocrinidae*, established for *Zophocrinus*; BATHER (19) p. 150.
- †*Zophocrinus howardi*, redescr. with original fig. lxiii; loc. cit.: internal casts; WELLER (348) p. 152, pl. xv.

#### †G. CYSTIDEA

(including EDRIOASTEROIDEA).

*Cystidea*, diagnosis (p. 39), classification (p. 40), severance of *Edrioasteroidea*, leaving Orders *Amphoridea*, *Diploporita*, *Rhombifera*, and *Aporita*; BATHER (19).

*Edrioasteroidea*, incl. *Thyroida*, *Agelacrinoidea*, *Cystasteroidea*, *Thecoidea*,

† All extinct.

diagnosis, divided into Families, *Agelacriniidae*, *Cyathocystidae*, *Easteridae*, and *Steganoblastidae*; op. cit. p. 205 et sqq.  
*Cystidea* of Bohemia after Barrande, revised according to JAEKEL (Zool. Rec. 1899, comprise 27 *Cystidea*, 7 *Carpoidae* [*Anomalocystis* 4 *Thecoidea* [*Edrioasteroidea*], 2 *Blas.*, and 10 *Crin.*; PERNER (26 *Cystid* genus indet., a *Diploporite*; GUERICH (146) p. 370.

*Acanthocystis*; BATHER (19) p. 46.

*Achrdocystis*, referred to *Comarocystidae*; op. cit. p. 55.

*Aenocystis*, descr., referred to *Edrioasteridae*; op. cit. p. 208.

*Aethocystis*, referred to *Tiaracriniidae*; op. cit. p. 57.

*Agelacriniidae*, diagnosis, genera described; op. cit. p. 207.

*Agelacrinus*, descr.; loc. cit. and fig. iii. *A. buchianus*, vide sub *Edrio*  
*A. sp.* (p. cxxiii), *A. marginatus* (pp. xcv, xcvi); WINCHELL & UL  
 (357).

*Allocystis*, referred to *Sphaeronidae*; BATHER (19) p. 72.

*Amorphocystis*, vide *Caryocystis*.

*Amphoridea*, diagnosis and systematic account; BATHER (19) p. 43 et

*Amygdalocystis florealis*, original drawing; op. cit. p. 57, fig. xix.

*Anomalocystidae*, diagnosis and description of genera; op. cit. p. 49 et

*Anomalocystis*, anus described; ZITTEL & EASTMAN (369) p. 186;  
 anus is unknown; BATHER in Review. *A. cornutus* may be *A*  
*cystis*; BATHER (19) p. 51: SCHUCHERT (303) p. 280. *A. dispar*  
 op. cit. pp. 292, 313: probably *Placocystis*; BATHER (19) p. 51.

*Anthocystis*, vide *Callocystis*.

*Apiocystis*, vide *Lepadocrinus*.

*Aporita*, provisional Order, diagnosed and restricted; BATHER (19) p

*Aporocrinus gyratus* Austin, is an *Agelacrinid*; op. cit. p. 201.

*Arachnocystis*, redescri.; op. cit. p. 54.

*Archeogocystis*; BATHER (19) p. 73.

*Aristocystidae*, diagnosis, and account of genera; op. cit. p. 44 et sqq.

*Aristocystis*, redescri.; loc. cit. and figg. i-iii. *A. bohemicus*; ZELIZKO (p. 90.

*Asocystis*, probably a Camerate *Crinoid*; BATHER (19) p. 77.

*Atelocystis*; op. cit. p. 51.

*Baculocystis*; op. cit. p. 46.

*Balanocystis*; op. cit. p. 77.

*Belemnocystis*; BATHER (19) p. 51.

*Calix*, incl. *Craterina* pars, redescri.; op. cit. p. 46, figg. v, vi.

*Callocystinae*, sub-fam. of *Glyptocystidae*; op. cit. p. 61.

*Callocystis*, incl. *Anthocystis*, redescri.; op. cit. p. 62, fig. xxxi.

*Cardiocystis*; BATHER (19) p. 77.

*Carpocystis*, referred to *Sphaeronidae*; op. cit. p. 73.

*Caryocrinidae*, diagnosis, and description of genera; op. cit. p. 65.

*Caryocrinus*; ZITTEL & EASTMAN (369), fig. 296 b: should be *Caryocy*  
 BATHER in Review: redescri., incl. *Stribalocystis*, *Enneacystis*; BAT  
 (19) p. 67, fig. xxxvi. *C. ornatus*; WILLIAMS (352) p. 51.

*Caryocystis*, incl. *Amorphocystis*, redefined with genotype *C. angelini*  
*testudinarius* Auctt.; BATHER (19) p. 55, fig. xvii. *C. granat*  
 WIMAN (356).

*Cheirocrinus*, redescri., *C. penniger* (fig. xxxii), *C. rolborthi*; BATHER  
 p. 63.

*Cigara*; op. cit. p. 48.

*Citrocystis*, vide *Echinospaera*.

*Codiacystis*; BATHER (19) p. 73.

*Comarocystidae*, diagnosis, and description of genera; op. cit. p. 55.

*Comarocystis*, redescri.; loc. cit.

*Corylocrinus*, redescri.; op. cit. p. 67, fig. xxxvi.

*Craterina*, vide *Calix*. *C. bohémica* and *C. docens*; ZELIZKO (366) p. 1

- Crinocystis*, probably a Camerate *Crinoid*; BATHER (19) p. 77.  
*Cryptocrinidae*, retained in *Aporita*, genera descr.; op. cit. p. 69.  
*Cryptocrinus*, redescri.; loc. cit. and fig. xxxvii.  
*Crystallocystis*, vide *Echinospaera*.  
*Cyathocystidae*, diagnosis, and *Cyathocystis*, descr.; BATHER (19) p. 208, fig. v.  
*Cyclocystoides*, referred to *Edrioasteroidea*, descr.; op. cit. p. 210, fig. viii.  
*C. sp.*; WINCHELL & ULRICH (357) p. cxxiii.  
*Cystaster*, incl. *Thecocystis*, descr.; BATHER (19) p. 207, fig. ii.  
*Cystoblastus*, redescri., referred to *Glyptocystinae*, relationship to *Blastoids* denied; op. cit. p. 64, fig. xxxiv.  
*Dendrocystidae*, diagnosis; BATHER (19) p. 47.  
*Dendrocystis*, redescri.; loc. cit. and fig. ix.  
*Deutocystis*, redescri.; op. cit. p. 46, fig. vii.  
*Dictyocrinus*; op. cit. p. 77.  
*Dinocystis*; BATHER (19) p. 209.  
*Diploporita*, Order, diagnosis and classification; op. cit. p. 70 et sqq.  
*Discocystis*; op. cit. p. 208.  
*Echinoencrininae*, sub-fam. of *Glyptocystidae*; op. cit. p. 60.  
*Echinoencrinus*, redescri., incl. *Gonocr.* and *Sycocystis*, and perhaps *Erinocystis*; BATHER (19) p. 60, figg. xxii, xxiii.  
*Echinospaera*, incl. *Crystallocystis*, *Citrocystis*, *Trinemacystis*, redescri.; op. cit. p. 53, figg. xiv, xv. *E. baltica*; ALMERA (8) p. 733, and (9) p. 744; MALAISE (218) p. 806, and (219) p. 205. *E. munita*; op. cit. p. 200.  
*Echinospaeridae*, diagnosis and description of genera; BATHER (19) p. 52 et sqq.  
*Edrioaster*, descr.; op. cit. p. 209. *E. sp.*; WINCHELL & ULRICH (357) p. cxxiii. *E. bigsbyi*, original drawings; BATHER (19) p. 209, fig. vi.  
*E. buchianus*, redescription of holotype, and portion of another specimen; BATHER (20).  
*Edrioasteridae*, diagnosis, genera discussed; BATHER (19) p. 208.  
*Enneacystis*, vide *Caryocrinus*.  
*Enoploura*, maintained for *E. balanoides* and *E. crustacea*, the latter restricted; BATHER (19) p. 51.  
*Eocystidae*, founded for *Eocystis longidactylus* and forms of similar structure; op. cit. p. 48.  
*Eocystis* Billings, discussed (p. 48), *E. (?) longidactylus* (p. 49, fig. x); BATHER (19).  
*Erinocystis*, vide *Echinoencrinus*.  
*Eucystis*, redescri. perhaps incl. *Holocystites* spp. and *Trematocystis*; BATHER (19) p. 72, fig. xl.  
*Eurycystis* sp.; WINCHELL & ULRICH (357) p. cxxiii.  
*Fungocystis*, reconstruction; BATHER (19) p. 74, fig. xlv.  
*Glaphyrocystis*; op. cit. p. 60.  
*Glyptocystidae*, diagnosis, erection of sub-families *Echinoencrininae*, *Collocystinae*, *Glyptocystinae*, with description of genera; op. cit. p. 58.  
*Glyptocystinae*, sub-fam. of *Glyptocystidae*; BATHER (19) p. 63.  
*Glyptocystis*, redescri.; op. cit. p. 64, fig. xxxiii. *G. sp.*; WINCHELL & ULRICH, p. cxxiii.  
*Glyptosphaera leuchtenbergi*, redescri.; BATHER (19) p. 73, fig. xliii.  
*Glyptosphaeridae*, diagnosis, and description of genera; loc. cit.  
*Gomphocystidae*, diagnosis; op. cit. p. 76.  
*Gomphocystis*, redescri.; op. cit. p. 77, fig. xlviii.  
*Gonocrinus*, vide *Echinoencrinus*.  
*Hallucystis*, vide *Lepadocrinus*.  
*Haplocystis*, discussed; BATHER (19) p. 208.  
*Heliocrinus*, incl. *Heliocystis*; op. cit. p. 55.

- Hemicosmites*, incl. *Hexalacystis*, redescri.; op. cit. p. 66, fig. xxxvi.  
*Hemicystis*, discussed; BATHER (19) p. 207.  
*Heterocystis*, redescri., referred to *Caryocrinidae*; op. cit. p. 67, fig. xxxvi.  
*Hexalacystis*, vide *Hemicosmites*.  
*Holocystites gyrinus*; BATHER (19) p. 72, fig. xlii.  
*Holocystis*, vide *Megacystis*.  
*Homocystis*; BATHER (19) p. 64.  
*Juglandocrinus*, redescri.; op. cit. p. 67, fig. xxxvi.  
*Lapillocystis*; op. cit. p. 46. *L. fragilis*; ZELIZKO (365) pp. 321, 323.  
*Lepadocrinus*, incl. *Apiocystis*, *Staurocystis*?, *Hallicystis*, and *Pseudocr.*  
*quadrifasciatus* and *P. oblongus*, redescri.; BATHER (19) p. 61, figg.  
 xxix, xxx. *L. sp.* nondescr., Helderbergian, New York, and *L. geb-*  
*hardi*; SCHUCHERT (303) p. 280.  
*Lepadocystis*, incl. *Meekocystis*, redescri.; BATHER (19) p. 61, fig. xxviii.  
*Lepidodiscus*, descr.; op. cit. p. 208, fig. iv.  
*Lichenocrinus sp.*; WINCHELL & ULRICH (357) p. cxxiii. *L. affinis*;  
 SCHUCHERT (302) p. 155.  
*Lichenoides*, incl. *Lichenocystis*, redescri.; BATHER (19) p. 56. *L. prius*;  
 ZELIZKO (365) pp. 322, 323.  
*Lodanella*; BATHER (19) p. 46. *L. mira* Kayser (as Sponge), has 5  
 forked arms, as a Crinoid, but stereom structure resembles *Cyst.* e.g.  
*Craterina*; SCHLUETER (298).  
*Lysocystis*, incl. *Echinocystis* Hall and *Scolocystis* Greg., redescri.; BATHER  
 (19) p. 70.  
*Macrocytella*, redescri., probably incl. *Mimocystis*; op. cit. p. 56, fig.  
 xviii.  
*Macrocytellidae*, diagnosis, and description of genera; loc. cit.  
*Malocystidae*, diagnosis, and description of genera; BATHER (19) p. 57.  
*Malocystis*; op. cit. p. 58.  
*Meekocystis*, vide *Lepadocystis*.  
*Megacystis*, discussed; BATHER (19) p. 47.  
*Mesocystidae*, diagnosis; op. cit. p. 75.  
*Mesocystis*, syn. *Mesites* Hoffm., redescri.; loc. cit. and fig. xlvii.  
*Mimocystis*, vide *Macrocytella*.  
*Mitrocystis*, redescri.; BATHER (19) p. 50, fig. xii. *M. sp.*; ZELIZKO (365)  
 p. 323.  
*Neocystis*; BATHER (19) p. 77.  
*Orocystis*, redescri.; op. cit. p. 54, fig. xv.  
*Palaeocystis*; loc. cit.  
*Palmacystis*; BATHER (19) p. 73.  
*Pilocystis*; op. cit. p. 46.  
*Pirocystis*; op. cit. p. 47, fig. viii.  
*Placocystis*, redescri.; op. cit. p. 51, fig. xiii.  
*Platycystis*; BATHER (19) p. 51.  
*Pleurocystis*, redescri.; op. cit. p. 64, fig. xxxiv. *P. sp.*; WINCHELL &  
 ULRICH (357) p. cxxiii.  
*Pomocystis*, rejected; BATHER (19) p. 72.  
*Pomonites*, rejected; loc. cit.  
*Pomosphaera*, rejected; BATHER (19) p. 72.  
*Porocrinus*, vide sub iv, F.  
*Proteocystis*, redescri.; BATHER (19) p. 73, fig. xli.  
*Proteroblastus*, syn. *Dactylocystis*, redescri.; op. cit. p. 74, fig. xlv.  
*Protoerinidae*, diagnosis, and description of genera; BATHER (19) p. 74.  
*Protocrinus*, redescri.; loc. cit. and fig. xlv.  
*Prunocystis*, incl. *P. fletcheri* (fig. xxiv) and *Echinoencr. baccatus*, redescri.;  
 BATHER (19) p. 60.  
*Pseudocrinus*, redescri.; op. cit. p. 62, fig. xxix; vide etiam *Lepadocr.*  
*Rhombifera*, Order, diagnosis, and classification; op. cit. p. 52.

*Rhombifera* Barr., genus redescri., *R. mira* referred to *Stephanocr.*; op. cit. p. 57.

*Schizocystis*, redescri.; BATHER (19) p. 61, figg. xxv-xxvii.

*Scoliocystis*; op. cit. p. 60.

*Sphaerocystis*; op. cit. p. 63. *S. multifasciatus*; SCHUCHERT (303) p. 280.

*Sphaeronidae*, diagnosis, and description of genera; BATHER (19) p. 71.

*Sphaeronis*, redescri.; loc. cit. and figg. xxxviii, xxxix. *S. punctatus*; MALAISE (219) p. 200. *S. stelluliferus*; MALAISE (218) p. 806, and (219) pp. 196, 205.

*Staurocystis*, vide *Lepadocrinus*.

*Staurosoma*, vide *Tiaracrinus*.

*Steganoblastidae*, fam. of *Edrioasteroidea*, diagnosis; BATHER (19) p. 209.

*Steganoblastus*, incl. *Astrocystites*, descr. and discussed, with original drawings of *S. ottawaensis*; loc. cit. and fig. vii.

*Stichocystis*; BATHER (19) p. 55.

*Streptaster*; op. cit. p. 208.

*Stribalocystis*, vide *Caryocrinus*. *S.?* *elongatus*, n. sp., *Delthyris* Shaly Limest., Lower Helderberg group, Red Rock landing, Perry county, Mo.; *S. missouriensis*, n. sp., Niagara Limest., St. Genevieve county, Mo.; ROWLEY (289) p. 71, pl. ii.

*Strobilocystis*; BATHER (19) p. 63.

*Stromatocystis*, descr.; op. cit. p. 207, fig. i.

*Sycocystis*, vide *Echinoencrinus*.

*Syringocrinus paradoxus*; BATHER (19) p. 48.

*Tiaracrinidae*, diagnosis, and description of genera; op. cit. p. 57.

*Tiaracrinus*, incl. *Staurosoma*, redescri.; loc. cit.

*Trigonocystis*, vide *Trochocystis*.

*Trinemacystis*, vide *Echinospaera*.

*Trochocystis*, incl. *Trigonocystis*, redescri.; BATHER (19) p. 50, fig. xi.

#### †H. BLASTOIDEA.

*Blastoidea*, diagnosis, division into Grades *Proto-* and *Eu-blastoidea*, with classification; BATHER (19) p. 78 et sqq.

*Acentrotremites*, redescri., referred to *Orbitremitidae*; op. cit. p. 90, fig. xii.

*Asteroblastidae*, diagnosis, and description of genera; op. cit. p. 80.

*Asteroblastus*, incl. *Asterocystis*, redescri.; loc. cit. and figg. i, ii.

*Astrocrinus*, vide *Zygocrinus*.

*Blastoidocrinidae*, diagnosis; BATHER (19) p. 80.

*Blastoidocrinus*, redescri. with reconstruction; loc. cit. and fig. iii.

*Codaster*, redescri.; op. cit. p. 82, figg. v, vi. *C. gracillimus*; ROWLEY (289) p. 66, pl. ii: horizon; ROWLEY (291) p. 249. *C. grandis*, test now first figured; ROWLEY (289) p. 66, pl. ii: horizon; ROWLEY (291) p. 250. *C. (Cryptoschisma?) laeviculus*, n. sp., base of Upper Burlington Limest., Louisiana, Mo.; ROWLEY (289) p. 65, pl. ii: ventral view; ROWLEY (290) pl. v, fig. 74: horizon, is not *Codaster*, but nearer to *Phaenochisma* and [or] *Cryptoschisma*; ROWLEY (291) p. 250.

*Codasteridae*, diagnosis; BATHER (19) p. 91.

*Codonites*, vide *Orophocrinus*.

*Codonoblastida*, Series of *Eublastoidea*, incl. *Codasteridae* and *Pentremitidae*; BATHER (19) p. 91.

*Cryptoblastus*, redescri.; op. cit. p. 89. *C. melo*, horizons, variation, probably incl. *C. concinnulus* and *C. projectus*; ROWLEY (291) p. 245.

*Cryptoschisma*, redescrib.; BATHER (19) p. 84, fig. vii: vide etiam *Codaster laeviculus*.

*Dimorphocrinus*, vide *Orophocrinus*.

*Elaeocrinus*, vide *Nucleocrinus*.

*Eleutheroocrinidae*, diagnosis; BATHER (19) p. 92.

*Eleutheroocrinus*, redescrib.; op. cit. p. 87, fig. ix.

*Eublastoidea*, higher grade of *Blastoidea*, diagnosis, and classification into Series *Codonoblastida*, *Troostoblastida*, and *Granatoblastida*; op. cit. pp. 81-93.

*Granatoblastida*, Series of *Eublastoidea*, incl. *Nucleocrinidae*, *Orbitremiidae*, *Pentaphyllidae*, and *Zygocrinidae*; BATHER (19) p. 92.

*Granatoblastidae*, vide *Orbitremiidae*.

*Granatocrinus*, vide *Orbitremites*.

*Heteroblastus*; BATHER (19) p. 90.

*Irregulares*, Order, rejected; op. cit. p. 91.

*Mesoblastus*, referred to *Orbitremiidae*; op. cit. pp. 90, 92.

*Metablastus*, redescrib.; op. cit. p. 87. *M. lineatus*, range; ROWLEY (291) p. 250.

*Nucleocrinidae*, diagnosis and restriction; BATHER (19) p. 92.

*Nucleocrinus*, incl. *Elaeocr.* and *Olivanites*, redescrib.; op. cit. p. 88, figg. x, xi.

*Olivanites*, vide *Nucleocrinus*.

*Orbitremites*, incl. *Granatocr.*, redescrib.; BATHER (19) p. 90, figg. xii, xv.

*G.* [i.e. *O.*] sp., Timor; BOEHM (41) p. 555. *G.* [i.e. *O.*] sp. nondescrib., Lower Burlington Limest.; ROWLEY (289) p. 74, pl. ii. *G.* [i.e. *O.*] *aplatus*, enlarged fig.; op. cit. p. 67, pl. ii: range, variations; ROWLEY (291) p. 248. *G.* [i.e. *O.*] *calycinus*, n. sp., base of Upper Burlington Limest., Louisiana, Mo.; ROWLEY (289) p. 66, pl. ii: horizon; ROWLEY (291) p. 249. *G.* [i.e. *O.*] *excavatus*; loc. cit. *G.* [i.e. *O.*] ?*magnibasis*, horizon; loc. cit. *G.* [i.e. *O.*] *mutabilis*, horizon, growth-stages (p. 250); *O. norwoodi*, horizons, variation, with var. *fimbriatus* (p. 247); *G.* [i.e. *O.*] *pyriformis* [sic] (p. 249); *G.* [i.e. *O.*] ?*pisum*, range, variation, perhaps incl. *G. exiguus* (p. 248); *G.* [i.e. *O.*] *roemeri*, range, incl. *G. sampsoni* (p. 250); ROWLEY (291) *G.* [i.e. *O.*] *spinuliferus*, n. sp., Warsaw? (St. Louis) Limest., Grand Tower, Ill., and Wittenberg, Mo.; ROWLEY (289) p. 69, pl. ii. *G.* [i.e. *O.*] *stella*, n. sp., base of Upper Burlington Limest., Louisiana, Mo., this with *G. magnibasis* may form a new genus; ROWLEY (289) p. 68, pl. ii, and (291) p. 249.

*Orbitremiidae*, revision and diagnosis; BATHER (19) p. 92.

*Orophocrinus*, incl. *Dimorphocr.* and *Codonites*, redescrib.; op. cit. p. 85, figg. iv, vii. *O. conicus*? in Lower Burlington; ROWLEY (291) p. 251. *C.* [i.e. *O.*] ?*inopinatus*, and an allied form, these with *Granatocr. aplatus* perhaps constitute a new genus; ROWLEY (289) p. 67, pl. ii: range; ROWLEY (291) p. 248. *O. stelliformis*, range, growth-stages; op. cit. p. 249. *C.* [i.e. *O.*] *whitii*?; ROWLEY (289) p. 68, pl. ii: horizon; ROWLEY (291) p. 249.

*Pentatremitides*, vide *Pentremites*.

*Pentaphyllidae*, diagnosis; BATHER (19) p. 93.

*Pentaphyllum*, discussed; op. cit. p. 90.

*Pentremites*, redescrib.; op. cit. p. 86, figg. vii, xv. *P.* sp.; DOUVILLE (94) p. 593. *Pentatremitides* [i.e. *Pentremites*] sp.; JAEKEL in FRECH (124) p. 204, fig. 45. *P. benedicti*, n. sp., Warsaw? (St. Louis) Limest., Grand Tower, Ill., and Wittenberg, Mo.; ROWLEY (289) p. 69, pl. ii. *P. burlingtonensis*, "probably a rotund *P. elongatus*"; ROWLEY (291) p. 248. *P. elongatus*, range, extra anal plate; op. cit. p. 247.

*Pentremiidae*, diagnosis and restriction; BATHER (19) p. 92.

*Pentremiidae*, redescrib.; op. cit. p. 85.

*Phaenoscisma*, redescrib.; op. cit. p. 84, fig. vii.

*Protoblastoidea*, the lower grade of *Blastoidea*, diagnosis, and classification into families *Asteroblastidae* and *Blastoidocrinidae*; op. cit. pp. 79–81.

*Regulares*, Order, rejected; BATHER (19) p. 91.

*Schizoblastus*, redescri.; op. cit. p. 89. *S.* sp. nondescr. (p. 249), *S. sayi*, horizons, variation, anal tube (p. 247); ROWLEY (291).

*Tricoelocrinus*, redescri.; BATHER (19) p. 87, fig. xv.

*Troostoblastida*, Series of *Eublastoidea*, incl. *Troostocrinidae* and *Eleutherocrinidae*; op. cit. p. 92.

*Troostoblastidae*, vide *Troostocrinidae*.

*Troostocrinidae*, diagnosis; BATHER (19) p. 92.

*Troostocrinus*, redescri.; op. cit. p. 86, fig. viii. *T.?* *dubius*, n. sp., Delthyris Shaly Limest., Lower Helderberg group, Wittenberg, Mo.; ROWLEY (289) p. 70, pl. ii.

*Zygocrinidae*, diagnosis; BATHER (19) p. 93.

*Zygocrinus*, incl. *Astrocrinus*, redescri.; op. cit. p. 91, fig. xiv. *A.* [i.e. *Z.*] *benniei*; PEACH (260) p. 223.

#### K. INCERTAE SEDIS.

- †*Paropsonema cryptophya*, n. g. et sp., *Intumescens* zone, Portage Sandstone, Naples, N.Y. "probably an echinoid," but "the characters are so unusual and so different from structures presented by the fossil and recent *Echinodermata*" [that its Echinoderm nature is very doubtful]; CLARKE (68).





# XV. VERMES.

BY

ARTHUR WILLEY, D.Sc.

## CONTENTS.

	Page		Page
I. TITLES . . . . .	3	Cestoda	
II. SUBJECT-INDEX.		(a) General Biology . .	38
VERMES (general subject) . .	21	(b) Distribution . . .	39
III. ANNELIDA		(c) Systematic . . .	40
Gephyrea		Trematoda	
(a) General Biology . .	22	(a) General Biology . .	42
(b) Distribution . . .	22	(b) Distribution . . .	42
(c) Systematic . . .	22	(c) Systematic . . .	43
Polychæta		NEMATHELMINTHES	
(a) General Biology . .	22	Nematoda	
(b) Distribution . . .	24	(a) General Biology . .	45
(c) Systematic . . .	24	(b) Distribution . . .	46
Oligochæta		(c) Systematic . . .	46
(a) General Biology . .	29	Acanthocephala	
(b) Distribution . . .	30	Systematic . . . . .	48
(c) Systematic . . .	31	Chætognatha	
Hirudinea		Distribution . . . . .	48
(a) General Biology . .	33	ROTIFERA	
(b) Distribution . . .	34	(a) General Biology . .	48
(c) Systematic . . .	34	(b) Distribution . . .	49
PLATHELMINTHES		(c) Systematic . . .	49
Nemertina		GASTROTRICHA	
(a) General Biology . .	35	Distribution . . . . .	49
(b) Distribution . . .	35	HEMICHORDA	
(c) Systematic . . .	36	(a) General Biology . .	49
Turbellaria		(b) Distribution . . .	49
(a) General Biology . .	36	(c) Systematic . . .	
(b) Distribution . . .	37		
(c) Systematic . . .	37		

## INTRODUCTION.

THE helminthological work for the year 1900 shows no signs of abatement.

Professor McINTOSH's (198) monograph of the British Aphroditea, being the first part of his long expected monograph of British Polychæta, is probably the most notable systematic publication of the year. An epoch in the taxonomy of Oligochaeta is without doubt inaugurated by MICHAELSEN's catalogue (209). Among other works dealing with the classification, anatomy and physiology of the Annelida we may note the researches of DARBOUX (92) on the Aphroditea, METALNIKOFF (203) on *Sipunculus*, GOODRICH (125) on the nephridia of *Polychæta*, BEDDARD (19) on the genus *Amyntas* formerly *Perichæta*, now itself doomed to give way to *Pheretima*, GAMBLE & ASHWORTH (118) on Arenicolidae, EHLERS (101), GRAVIER (128), FISCHLI (107) and VERRILL (319), on the Polychæta of Magellan Strait, Red Sea, Ternate and the Bermudas respectively; APSTEIN (6) on Pelagic Polychæta, BLANCHARD (33), BRUMPT (58), CASTLE (68), MOORE (221) and SUKATSCHOFF (307), on the Hirudinea; F. SMITH (292), BOCK (37) and EISEN (103) on Oligochaeta; HASWELL (140) on a new Histriobdellid.

New genera of Nemertina reveal themselves to BERGENDAL (28), PUNNETT (251), THOMPSON (313). The habits and development of *Cerebratulus lacteus* are described as a contribution to physiological morphology by C. B. WILSON (337).

Turbellarians are described by SABUSSOW (278), SHIPLEY (288), FUHRMANN (112), DÖRLER (95). Regeneration of Planarians is investigated among others by MORGAN (224), MONTI (218), LILLIE (169) and LEMON (167).

Entozoa as usual come in for a large share of attention from ARIOLA (8), COHN (79), BRAUN (43), FUHRMANN (110), LOOSS (181), LÜCHE (182), LINSTOW (176), SHIPLEY (289), VOLZ (323), WOLFFHÜGEL (338), BENHAM (26), BENEDICT (24), RÄTZ (258), NASSONOW (227) and many others. The veteran helminthologist STOSSICH (305) has the customary annual monograph which is very hard to come by, while the habits of free-living Nematoda are the subject of another masterpiece by MAUPAS (196).

Rotifera, intimately associated with Plankton-researches, are described by ROUSSELET (276), J. C. SMITH (294), JENNINGS (160), listed by ZSCHOKKE (342) in a notable *mémoire couronné*, also by AMBERG (3), BURCKHARDT (60), ZYKOFF (344), KOFOID (162) and illustrated by HAECKEL (137).

ROULE's (275) work on the development of *Phoronis* records a host of data and touches on matters of controversy between him and MASTERMAN (192).

RITTER (265) describes Enteropneusta from Alaska, the principal feature being a species which he names *Harrimania maculosa* n. g. et sp.

It may be noted, however, that the character upon which he bases the new genus is not peculiar to this form which, in fact, is a *Balanoglossus* s. str. In the vicissitudes of nomenclature it nevertheless seems likely that *Harrimania* will triumph over *Balanoglossus*, not to mention *Balanocephalus*.

Finally, it is interesting to note the discovery of a new species of *Balanoglossus* s. str. (*B. koekleri*) in the Channel at Cape de la Hague, by the indefatigable zoologists CAULLERY & MESNIL (70).

## I. TITLES.\*

1. ALLEN, E. J. & TODD, R. A. The Fauna of the Salcombe Estuary. J. Mar. Biol. Ass. (N. S.) vi, Vermes, pp. 188-199.  
*Polychæta* by E. J. ALLEN.
  2. AMBERG, O. Die von Schröter-Amberg modifizierte Sedgwick-Rafter'sche Methode der Planktonzählung. Biol. Centrbl. xx, pp. 283-288.
  3. —. Beiträge zur Biologie des Katzenses. Vierteljahrschr. Ges. Zurich xlv, pp. 59-136, Taf. ii-vi.
  4. ANDREWS, C. W. A monograph of Christmas Island (Indian Ocean). London, 1900. [Earthworms by D. ROSA, q. v. (268).]
  5. APÁTHY, V. Mikroskopische Präparate über postembryonale Vermehrung und Wachstum der Neurofibrillen. Anat. Anz. xviii, Ergänzungsheft, pp. 211-213.
  6. ARSTEIN, C. Die Alciopiden und Tomopteriden der Plankton-Expedition. Plankton Exped. Bd. 2, pp. 1-61, 7 pls. & 7 maps, & 4 text-figg.
  7. ARIOLA, V. Eine Zweideutigkeit des Dr. Lühe. Zool. Anz. xxiii, pp. 417-419.
  8. —. Revisione della famiglia *Bothriocephalidae* s. str. Arch. parasit. iii, pp. 369-484, pls. 8-10.
  9. —. Nota sui Cestodi parassiti del *Centrolophus pompilius* Linn. Atti Soc. Ligustica xi, pp. 215-220. Also Monit. Zool. ital. Supp. xi, p. 14. Abstract.
- ASHWORTH, J. H. [See GAMBLE & ASHWORTH (118)].
10. ASKANAZY, M. Ueber Art und Zweck der Invasion der *Anguillula intestinalis* in die Darmwand. Centrbl. Bakter. xxvii, pp. 569-578, 1 Taf.
  11. —. Ueber Infektion des Menschen mit *Distomum felinum* (*sibiricum*) in Ostpreussen und ihren Zusammenhang mit Leberkrebs. Op. cit. xxviii, pp. 491-502.
  12. BACHMANN, HANS. Die Planktonfänge mittels der Pumpe. Biol. Centrbl. xx, pp. 386-400.
  13. BATAILLON, E. La Resistance des œufs d'*Ascaris* et la pression osmotique. C.R. Soc. Biol. lii, pp. 435-437.
  14. —. La pression osmotique et l'anhydrobiose. T. c. pp. 437 & 438.
  15. BEAUMONT, W. I. The Fauna and Flora of Valencia Harbour on the West Coast of Ireland. vii. The results of Dredging and Shore-collecting. P. Irish. Ac. (3) v, pp. 754-798, 1 chart.  
[Vermes, pp. 770-773 & pp. 782-785.]
  16. —. The Fauna and Flora of Valencia Harbour on the West Coast of Ireland. xi. The Nemertea. T. c. pp. 815-831.
  17. BEDDARD, F. E. On the Earthworms collected during the "Skeat Expedition" to the Malay Peninsula, 1899 & 1900. P. Zool. Soc. London 1900, pp. 891-911, 7 figg.

---

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

18. [BEDDARD, F. E.] On a new species of Earthworm from India belonging to the genus *Amyntas*. T. c. pp. 998-1002, 3 figg.
19. —. A Revision of the Earthworms of the genus *Amyntas* (*Pericheta*). T. c. pp. 609-652.
20. —. On the structure of a new species of Earthworm of the genus *Benhamia*. T. c. pp. 653-659, 3 figg.
21. —. On a species of Earthworm from Western Tropical Africa, belonging to the genus *Benhamia*. T. c. pp. 167-173, 3 figg.
22. —. The earthworms of the Hawaiian Archipelago. Fauna Hawaiiensis ii, Part iv, pp. 413-426.
23. BELL, F. JEFFERY. Remarks on a collection of Land-Planarians made by Dr Goeldi in Brasil. P. Zool. Soc. London 1900, pp. 266 & 267.
24. BENEDIOT, H. M. On the structure of two fish tapeworms from the genus *Proteocephalus* Weinland, 1858. J. Morphol. xvi, pp. 337-368, pl. 16.
25. BENGTSSON, S. Ueber sogen. Herzkörper bei Insectenlarven. Zugleich ein Beitrag zur Kenntniss der Blutgewebe. Section 4. Vergleich mit den Herzkörpern bei Anneliden, pp. 18-21. Bih. Svenaka Ak. xxv, Afd. iv, No. 3, pp. 1-23, 2 figg.
26. BENHAM, W. B. The structure of the Rostellum in two new species of Tapeworm, from *Apteryx*. Quart. J. Mic. Sci. xliii, pp. 63-96, pls. 7 & 8.
27. —. Note on the occurrence of the genus *Balanoglossus* in New Zealand Waters. Tr. N. Zealand Inst. xxii, pp. 9 & 10, 1 fig.
28. BERGENDAL, D. Über ein Paar sehr eigenthümliche nordische Nemertinen. Zool. Anz. xxiii, pp. 313-328, 6 figg.
29. —. Till kännedomen om de nordiska Nemertinerna. 1. Förteckning öfver vid Sveriges västkust iakttagna Nemertiner. Ofv. Ak. Forh. 57, pp. 581-602.
30. —. Bör ordningen *Palaeonemertini* Hubrecht uppdelas i tvänne ordningar *Protonemertini* och *Mesonemertini*? T. c. pp. 721-742, 4 figg.
31. BERNARD, H. M. A suggested origin of the Segmented Worms, and the problem of metamerism. Ann. Nat. Hist. (7) vi, pp. 509-520.
32. \*BERTARELLI, E. Un caso di trichinosi umana. Riv. d'igiene e sanità pubbl. Torino, 1900.
33. BLANCHARD, R. Hirudineen. H. Mag. Samm. v, part 4, Hamburg 1900, 20 pp., coloured plate and 13 text-figg.
34. —. Notes de parasitologie Sino-Japonaise. Arch. parasit. iii, pp. 5-33, pls. 1-4 & 4 text-figg.
35. —. Transmission de la filariose par les Moustiques. T. c. pp. 280-291, pl. 6.
36. —. Du rôle des eaux et des légumes dans l'étiologie de l'helminthiase intestinale. T. c. pp. 485-491.
37. BOCK, M. DE. Le corps cardiaque et les amibocytes des *Oligochètes limicoles*. Rev. Suisse Zool. viii, pp. 107-166, pls. 11 & 12.
38. BOLSIUS, H. Recherches sur l'organe cilié de l'*Hamenteria officinalis*. Cellule xvii, pp. 269-278, 1 pl.

39. BRADY, G. S. An afternoon's Dredging off Cullercoats. Nat. Hist. Tr. Northumb. xiii, pp. 442-444.  
*Actinotrocha*.
40. BRANDES, G. Zwei neue *Nephele*-Arten aus der Umgebung von Halle a-S. Zeitschr. Naturw. Bd. 72, pp. 450-452.
41. —. Das Vorkommen von *Planaria alpina* nördlich vom Harz. Op. cit. 73, pp. 303 & 304.
42. —. Die Begattung von *Clepsine tessulata*. T. c. pp. 126-128.
43. BRAUN, M. Die Arten der Gattung *Clinostomum* Leidy. Zool. Jahrb. Syst. xiv, pp. 1-48, Taf. 1 & 2.
44. —. Bemerkungen über die Fascioliden-Gattung *Rhopalias*. Zool. Anz. xxiii, pp. 27-29.
45. —. Einige Bemerkungen zu dem Artikel von W. G. MacCallum, "On the species *Clinostomum heterostomum*." T. c. pp. 140 & 141.
46. —. Einige Bemerkungen über die Fascioliden der Chiroptera. T. c. pp. 387-391.
47. —. Die Fascioliden-Gattung *Clinostomum* Leidy. Centrbl. Bakter. xxvii, pp. 24-32.
48. —. Ueber *Campula oblonga* Cobb. Op. cit. xxviii, pp. 249-254, 3 figg.
49. —. Vermes-Cestodes. Bronn's Thierreich, Bd. iv, Lief. 59-62.
50. BRENNAN, S. O. On the reproductive system of *Digaster* (*Didymogaster*) *sylvaticus* Fletch. P. Linn. Soc. N. S. Wales xxiv, pp. 691-696, pls. 53 & 54.
51. BRETSCHER, K. Ueber die Verbreitungsverhältnisse der Lumbriciden in der Schweiz. Biol. Centrbl. xx, pp. 703-717.
52. —. Mitteilungen über die Oligochætenfauna der Schweiz. Rev. Suisse Zool. viii, pp. 1-44, Taf. i-iii.
53. —. Südschweizerische Oligochæten. T. c. pp. 435-458, Taf. 33.
54. BROWNE, E. T. The Fauna and Flora of Valencia Harbour on the West Coast of Ireland. i. The Pelagic Fauna (1896-1898). P. Irish Ac. (3) v, pp. 667-693, pl. 19.  
*Polychæta*, pp. 686-688.
55. BRUMPT, E. De la fécondation par voie hypodermique chez les Hirudinées. C.R. Soc. Biol. lii, pp. 189 & 190.
56. —. Reproduction des Hirudinées. Formation du cocon chez *Piscicola* et *Herpobdella*. Bull. Soc. zool. France xxv, pp. 47-51, figg. 1a-d.
57. —. Reproduction des Hirudinées. Recherches expérimentales sur la Fécondation. T. c. pp. 90-93.
58. —. Reproduction des Hirudinées. Existence d'un tissu de conduction spécial et d'aires copulatrices chez les Ichthyobdellides. C.R. Ass. Franc. xxix, Paris 1900 (ii), pp. 688-710, 21 figg.
59. BUCHET, M. G. Considérations sur les conditions favorables au dosage de plankton de surface en haute mer. Rev. Scient. (4), xiv, 1 5-15, 7 figg.

60. BURCKHARDT, G. Faunistische und systematische Studien über das Zooplankton der grösseren Seen der Schweiz und ihrer Grenzgebiete. Inauguraldissertation, Rev. Suisse Zool. vii, pp. 353-713, Taf. 18-22. Rotifera, pp. 412-420. Abstract by IMHOFF in Biol. Centrbl. xx, pp. 426-432.
61. —. Quantitative Studien über das Zooplankton des Vierwaldstättersees. Mt. Ges. Luzern 1898-1900, iii, Heft. pp. 130-434, 1 fig. on p. 200.
62. BÜRGER, O. Nemertini (Schnurwürmer). Bronn's Thierreich, Bd. iv, Suppl. Lief. 14-17, 1899.
63. BUTSCHINSKY, P. Die Metazoenfauna der Salzseelimane bei Odessa. Zool. Anz. xxiii, pp. 495-497.
64. BUTTEL-REEPEN, H. v. Zwei grosse Distomen. T. c. pp. 585-598, 9 figg.  
Vorläufige Mittheilung.
65. CAPOBIANCO, F. Della influenza di agenti fisico-chimici sopra la eccitabilità dei nervi e dei muscoli lisci, negl' invertebrati; Ricerche sperimentali. Rend. Acc. Napoli (3) vi, pp. 237-239.  
*Sipunculus nudus*.
66. CARLGREN, O. Ueber die Einwirkung des constanten galvanischen Stromes auf niedere Organismen. Zweite Mittheilung: Versuche an verschiedenen Entwicklungsstadien einiger Evertabraten. Arch. Physiol. 1900, pp. 465-480.
67. CASTLE, W. E. The metamerism of the Hirudinea. P. Amer. Ac. xxiv, No. 15, pp. 285-303, 8 figg.
68. —. Some North American fresh-water Rhynchobdellidae and their parasites. Bull. Mus. Harvard xxxvi, No. 2, pp. 17-64, pls. 1-8, and 4 figg.
69. CATTERINA, G. Sanguisughe e microbi, osservazioni ed esperienze. Atti Soc. Veneto-Trent. iii. (2) 1897, pp. 208-220.
70. CAULLERY, M. et MESNIL, F. Sur une nouvelle espèce de *Balanoglossus* (*B. koehleri*) habitant les côtes de la Manche. C.R. Soc. Biol. lii, pp. 256-259.
71. —. Sur les parasites internes des Annélides polychètes, en particulier de celles de la Manche. C.R. Ass. Franc. xxviii, Boulogne 1899 (ii), pp. 491-496.
72. CHATIN, J. Karyokinèses anormales. C.R. Soc. Biol. lii, p. 345.
73. CHEVREL, R. et PORET. Un singulier Pseudelminthe (Radules de Patelles). Bull. Soc. Normand. (5) iii, pp. 98-109.
74. CHIFFLOT, J. La maladie noire des Clématites à grandes fleurs. Bull. Soc. Saône, 26th Ann., pp. 128-134, 1 pl.  
*Heterodera radicolica*.
75. CHILD, C. M. Abnormalities in the cestode *Moniezia expansa*. i. Imperfect and partial proglottids. Biol. Bull. i, pp. 215-250, figg. 1-23. ii. Spiral abnormalities. T. c. pp. 261-290, figg. 24-41.
76. —. The early development of *Arenicola* and *Sternaspis*. Arch. Entwicklmech. ix, pp. 587-722, pls. 21-25.
77. —. A specimen of *Nais* with bifurcated Prostomium. Anat. Anz. xvii, pp. 311 & 312, 1 fig.

78. COGNETTI, L. Viaggio del Dr A. Borelli nel Matto Grosso e nel Paraguay. ii. Contributo alla conoscenza degli *Oligocheti* neotropicali. Boll. Mus. Torino xv, No. 369, pp. 1-15.
79. COHN, L. Zur Anatomie der Vogelcestoden i. Zeitschr. wiss. Zool. lxvii, pp. 255-290, Taf. 14 u. 15.
80. —. Zur Kenntnis einiger Vogeltaenien. Zool. Anz. xxiii, pp. 91-98.
81. —. Zur Systematik der Vogeltänien. iv. Centrbl. Bakter. xxvii, pp. 325-328.  
     CONGDON, E. M. [See RITTER, W. E. & CONGDON, E. M. (266).]
82. CONTE, A. De l'influence du milieu nutritif sur le développement des Nématodes libres. C.R. Soc. Biol. lii, pp. 374 & 375.
83. —. Sur les conditions de ponte des Nématodes. T. c. pp. 375 & 376.
84. —. Sur la formation des feuillets et l'organogénie de *Sclerostomum equinum* Duj. C.R. Ac. Sci. cxxxi, pp. 846-848.
85. CORNEY, B. G., DAVID, Prof. & GUTHRIE, F. B. Note on the edible earth from Fiji. J. R. Soc. N. S. Wales xxxiii, 1899 (1900), pp. 224-227.  
     Reference to *Ancylostomum duodenale*.
86. COUPIN, H. Les animaux incrusteurs. Rev. Scient. (4) xiii, pp. 684-690.
87. CUÉNOT, L. Recherches sur l'évolution et la conjugaison des Grégaires. Arch. Biol. xvii, pp. 581-652, pls. 18-21.  
     Grégaires des Lombrics, pp. 583-594.
88. CURTIS, W. C. On the reproductive system of *Planaria simplissima*, a new species. Zool. Jahrb. Anat. xiii, pp. 447-466, pls. 31 & 32.
89. —. The anatomy and development of the reproductive organs of *Planaria maculata*. Johns Hopkins Univ. Circ. xix, No. 146, pp. 56-59, 9 figg.
90. DADAY, E. v. Helminthologische Studien. Einige in Süßwasser-Entomostraken lebende *Cercocystis*-Formen. Zool. Jahrb. Syst. xiv, pp. 161-214, Taf. 10-12.
91. DARBOUX, G. Sur le rôle physiologique des cœcums intestinaux des Aphroditien. (Annélides Polychètes errants.) Bull. Soc. Nîmes xxvii, pp. 53-58.
92. —. Recherches sur les Aphroditien. Bull. Sci. France Belgique xxxiii, pp. 1-274, 83 text-figg.
93. DEARBORN, G. V. N. Do the reactions of the lower animals against injury indicate pain sensations? Science (N. S.) xi, pp. 270-272.  
     Abstract of posthumous article by Prof. W. W. NORMAN.
94. DIAMARE, V. *Paronia carrinoi* n. g., n. sp. von Tännioiden mit doppelten Geschlechtsorganen. Centrbl. Bakter. xxviii, pp. 846-851, 4 figg.  
     Also in Atti Soc. Ligustica xi, pp. 141-148, 4 figg.
95. DÖRLER, A. Neue und wenig bekannte rhabdocöle Turbellarien. Zeitschr. wiss. Zool. lxviii, pp. 1-42, Taf. 1-3 u. 3 text-figg.



96. DRAGO, U. Sul probabile incistamento del *Pachydrilus catanensis*. Zool. Anz. xxiii, pp. 18-21.  
Nota rettificativa.
- 97 \* —. Ricerche sull' azione di alcuni liquidi idatidei e significato biologico dei medesimi. Rassegna Medicina moderna, An. i, No. 16, Catania, 1900.
98. DUBOIS, R. Du cuivre normal dans la série animale (Animaux marins et terrestres). Ann. Soc. Linn. Lyon 1900, pp. 93-97.  
*Hirudo*.
99. —. Action de l'oxyde de carbone sur les invertébrés à sang rouge. T. c. pp. 127-133.  
*Naïs, Hirudo*.
100. DUBREUILH, W. Dermatozoaires. Centrbl. Bakter. xxviii, pp. 456 & 457. [Extrait de la pratique dermatologique, T. 1.]  
*Filaria*.
101. EHLERS, E. Magellanische Anneliden gesammelt während der schwedischen Expedition nach den Magellansländern. Nachr. Ges. Göttingen 1900, pp. 206-223.
102. —. Ueber atlantischen Palolo. T. c. pp. 397-399.
103. EISEN, G. Researches in American Oligochaeta, with especial reference to those of the Pacific Coast and adjacent Islands. P. Calif. Ac. (3) ii, pp. 85-276, 10 pls. and text-fig.
104. EMBLETON, ALICE L. On the structure and affinities of *Echiurus uncinatus*. Tr. Linn. Soc. London (2) viii, pp. 77-97, pls. 7-10, 1 fig.
105. FAUVEL, P. Annélides Polychètes recueillies à Cherbourg. Mem. Soc. Cherbourg xxxi (1898-1900), pp. 305-319.
106. FIORENTINI, A. e GARINO, E. Un caso di Echinococco multiloculare. Atti Soc. Ital. xxxix, pp. 125-129, 1 pl.
107. FISCHLI, H. Polychäten von Ternate. Abh. Senckenb. Ges. xxv, pp. 91-136, 5 pls. and 1 text-fig.
108. FOOT, K. & STROBELL, E.C. Photographs of the egg of *Allolobophora fetida*. J. Morphol. xvi, pp. 601-618, pls. 35-37.
109. FRÍČ, A. & VAVRA, V. Vorläufiger Bericht über die Untersuchung der Elbe und ihrer Altwässer bei Podiebrad in Böhmen. Zool. Anz. xxiii, pp. 419 & 420.
110. FUHRMANN, O. Neue eigenthümliche Vogeltaenien. Zool. Anz. xxiii, pp. 48-51.
111. —. Beitrag zur Biologie des Neuenburger Sees. Biol. Centrbl. xx, pp. 85-96, & pp. 120-128.
112. —. Note sur les Turbellariés des environs de Genève. Rev. Suisse Zool. vii, pp. 717-731, pl. 23.
113. —. Zur Kenntnis der Acoelinae. Zwei getrenntgeschlechtige Cestoden. Centrbl. Bakter. xxviii, pp. 363-376, 12 figg.
114. GALLI-VALERIO, B. Notes de parasitologie. Centrbl. Bakter. xxvii, pp. 305-309, 4 figg.

115. GALLIER, M. Record of *Tenia (Cenurus) socialis* in the thigh of a rabbit. Bull. Soc. Normand. (5) iii, p. xxxix.
116. GAMBLE, F. W. The fauna and flora of Valencia Harbour on the West Coast of Ireland. iv. The *Chaetognatha*. P. Irish Ac. (3) v, pp. 745-747.
117. —. The fauna and flora of Valencia Harbour on the West Coast of Ireland. x. The *Turbellaria*. T. c. pp. 812-814.
118. — & ASHWORTH, J. H. The anatomy and classification of the Arenicolidae, with some observations on their post-larval stages. Quart. J. Micr. Sci. xliii, pp. 419-569, pls. 22-29.
119. GAST, R. Beiträge zur Kenntnis von *Apeilus vorax* (Leidy). Zeitschr. wiss. Zool. lxvii, pp. 167-214, Taf. 7 u. 8.
120. GATHY, E. Contribution à l'étude du développement de l'œuf et de la fécondation chez les Annélides (*Tubifex rivulorum* Lam. et *Clepsine complanata* Sav.). Cellule xvii, pp. 5-62, 4 pls.
121. GIARD, A. Sur le déterminisme de la métamorphose. C.R. Soc. Biol. lii, pp. 131-134.
122. GILES, G. M. The life-history of the free stage of *Ancylostoma duodenale*. (Brit. Med. Journ. 1899, p. 660.) Centrbl. Bakter. xxvii, p. 83.
123. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. Mem. Mus. Hist. nat. Belgique 1900, pp. 1-81, 3 pls. & 10 figg.  
List of Polychæta, p. 34.
124. GOLDSCHMIDT, R. Zur Entwicklungsgeschichte der *Echinococcus*-küpchen. Zool. Jahrb. Anat. xiii, pp. 467-494, Taf. 33 & 1 text-fig.
125. GOODRICH, E. S. On the nephridia of the Polychæta. Part. iii. The *Phyllodocidae*, *Syllidae*, *Amphinomidae*, etc., with summary and conclusions. Quart. J. Micr. Sci. xliii, pp. 699-748, pls. 37-42.
126. —. Observations on *Syllis vivipara* Krohn. J. Linn. Soc. xxviii, pp. 105-108, pl. 13.
127. GOTO, S. Notes on some exotic species of Ectoparasitic Trematodes. J. Coll. Japan xii, pp. 263-295, pls. 20 & 21.
128. GRAVIER, C. Contribution à l'étude des Annélides Polychètes de la mer Rouge. Première Partie. Arch. Mus. Paris (4) ii, fasc. 2, 1900, pp. 137-282 (not concluded), pls. 9-14.
129. —. Sur une nouvelle espèce du Genre *Procerastea* Langerhans. L'évolution et les affinités de ce genre. Ann. Sci. Nat. Sér. (8), Tome xi, pp. 35-50, pl. i.
130. —. Sur une nouvelle espèce du genre *Procerastea* Langerhans (*P. perrieri*) de Saint-Vaast-la-Hougue. Bull. Mus. Paris 1900, pp. 288-293, 12 figg.
131. —. Sur un type nouveau de Syllidien (*Fauvelia martinensis*). T. c. pp. 371-374, 7 figg.
132. —. Sur le commensalisme de l'*Eunice harassii* Audouin et M.-Edwards et de l'*Ostrea edulis* L. T. c. pp. 415-417.
133. —. Note sur une collection d'animaux recueillis au Laboratoire maritime de Saint-Vaast-la-Hougue en Août 1899. T. c. pp. 287 & 288.

134. [GRAVIER, C.] Sur une collection d'Animaux recueillis aux fles Chausey en Août 1899. T. c. pp. 293 & 294.
135. GREPPIN, ED. Description des fossiles du Bajocien supérieur des environs de Bâle. 3<sup>me</sup> Partie. Mem. Soc. pal. Suisse xxvii, pp. 127-210, 7 pls.  
Annelids, pp. 181-185.
136. GUIART, J. Rôle pathogène de l'Ascaride lombricoïde. Arch. parasit. iii, pp. 70-81, 1 fig.
137. HAECKEL, E. Kunst-Formen der Natur. Leipzig & Wien, Lief. iv & v.  
*Pedation.*
138. HANITSCH, R. An expedition to Mount Kina Balu, British North Borneo. J. Straits Asiat. Soc. No. 34, July 1900, pp. 49-88, 4 pls.  
Record of *Sipunculus robustus* occurring in abundance in sandy shore at Gaya and used for bait, p. 51.
139. HARMER, S. F. Note on the name *Balanoglossus*. P. Cambridge Soc. x, 1900, pp. 190 & 191.
140. HASWELL, W. A. On a new Histriobdellid. Quart. J. Micr. Sci. xliii, pp. 299-335, pls. 14 & 15.
141. —. On *Didymorchis*, a Rhabdocoele Turbellarian inhabiting the branchial cavities of New Zealand Crayfishes. P. Linn. Soc. N. S. Wales xxv, pp. 424-429, pls. 20 & 21.
142. —. Supplement to a "Monograph of the *Temnocephaleæ*." T. c. pp. 430-435, pl. 22.
143. HATAI, S. On the origin of the Sperm-Blastophore of some Aquatic Oligochaeta. Biol. Bull. i, pp. 149-154, 15 figg.
144. HAVET, J. Structure du Système nerveux des Annelides. *Nephele*, *Cleptine*, *Hirudo*, *Lumbriculus*, *Lumbricus* (Methode de Golgi). Cellule xvii, pp. 65-136, 7 pls.
145. —. Contribution à l'étude du Système nerveux des Trématodes (*Distomum hepaticum*). T. c. pp. 353-380, 4 pls.
146. HEFFERAN, M. Variation in the teeth of *Nereis*. Biol. Bull. ii, pp. 129-143, pls. 1 & 2.  
Abstract in P. Amer. Ass. xlix, pp. 206 & 207.
147. HEIDER, K. Über *Braunina*, ein neues Genus aus der Gruppe der Hemistomidæ. Verh. Deutsch. zool. Ges. 1900, pp. 19-22, text-figg. a-d.
148. HEINE, P. Beiträge zur Anatomie und Histologie der Trichocephalen, insbesondere des *Trichocephalus affinis*. Centrbl. Bakter. xxviii, pp. 779-787, & 809-817, 2 Taf.
149. HENRY, E. Les Vers de terre en forêt. Bull. Soc. Nancy, séances (Sér. iii.) i, pp. 23-34.
150. HESSE —. Über heimische Strudelwürmer. Jahresh. Ver. Wurtemb. lvi, p. lv.
151. HODGSON, T. V. The *Amphinomidæ*, *Aphroditidæ*, *Polynoidæ*, and *Sigalionidæ* of Plymouth and English Channel. J. Mar. Biol. Ass. (n. s.) vi, pp. 218-259.

152. HOLMES, S. J. The early cleavage and formation of the mesoderm of *Serpulorbis squamigerus* Carpenter. Biol. Bull. i, pp. 115-121, 7 figg.
153. HORST, R. Ein Protest gegen Namensänderung. Zool. Anz. xxiii, pp. 6-8.
154. ISLER, E. Beiträge zur Kenntnis der Nemertinen. T. c. pp. 177-180.  
Vorläufige Mittheilung.
155. JACOBI, A. Japanische beschaltete Pulmonaten. Anatomische Untersuchung des im zoologischen Museum der Kaiserl. Universität in Tokyo enthaltenen Materiales. i. Pulmonaten. (Journ. Coll. of Science, Tokyo, vol. xii, p. 1-102, pls. i-vi.) Abstract in Centrbl. Bakter. xxviii, p. 27.  
Distomids in pericardium of a Helicid *Eulota despecta*.
156. JÄGERSKIÖLD, L. A. *Diplostomum macrostomum* n. sp. Centrbl. Bakter. xxvii, pp. 33-37, 5 figg.
157. —. Ein neuer Typus von Kopulationsorganen bei *Distomum megastomum*. T. c. pp. 68-74, 4 figg.
158. —. *Levinseia (Distomum) pygmaea* Levinsen, ein genital-napftragendes *Distomum*. T. c. pp. 732-740, 3 figg.
159. JANDA, V. Přispěvky ku poznání rodu *Aeolosoma*. SB. Bohmisch. Ges. 1900, No. xxxi, 20 pp., 1 Taf.
160. JENNINGS, H. S. Rotatoria of the United States, with especial reference to those of the great Lakes. Bull. U. S. Fish Comm. (1899) 1900, pp. 67-104, pls. 14-22.
161. KLEE, Der gepaarte Luftröhrenwurm (*Syngamus trachealis*) und der Wurmhusten des Geflügels. (Deutsche tierärztliche Wochenschr. Jahrg. vii, No. 52.) Abstract in Centrbl. Bakter. xxvii, pp. 466 & 467.
162. KOFOID, C. A. The Plankton of Echo River, Mammoth Cave. Tr. Amer. Micr. Soc. xxi, 1899, pp. 113-126.
163. KOWALEWSKI, M. Études helminthologiques. vi. Sur quatre espèces du genre *Trichosoma* Rud. Bull. Ac. Cracovie 1900, pp. 183-186, 1 pl. (missing).
164. KRÄMER, A. Die tierischen Schmarotzer des Auges (Gräfe-Samisch's Handbuch, 1899, 10 und 11 Liefg. gr. 8vo, 182 pp., mit 17 figg.). Centrbl. Bakter. xxviii, pp. 517 & 518.
165. KROEBER, J. An experimental demonstration of the regeneration of the pharynx of *Allolobophora* from Endoderm. Biol. Bull. ii, pp. 105-110, 2 figg.
166. KUBORN, H. De l'anchylostome en général, spécialement de son invasion en Belgique (Bull. Ac. Belgique 1899, Heft. 8-11). Centrbl. Bakter. xxviii, pp. 215 & 216.
- 166A. LANKESTER, E. R. A Treatise on Zoology. Chapter II. The Enterocœla and the Cœlomocœla. London, 1900, Part II, pp. 1-37.
167. LEMON, C. C. Notes on the physiology of regeneration of parts in *Planaria maculata*. Biol. Bull. i, pp. 193-204, 19 figg.
168. LÉON, N. Notes de parasitologie roumaine. Arch. parasit. iii, pp. 228-236.

169. LILLIE, F. R. Some notes on regeneration and regulation in Planarians. i. The source of material of new parts and limits of size. Amer. Natural. xxxiv, pp. 173-177.
170. LINDEN, GRÄFIN v. Die Färbung und Zeichnung der Landplanarien. Biol. Centrbl. xx, pp. 556-560.
171. LINSTOW, O. v. Die Nematoden. Fauna Arctica (RÖMER & SCHAU-DINN), Bd. i, Lief. 1, pp. 119-132, Taf. vi & vii. Jena, 1900.
172. —. Über die Arten der Blutfilarien des Menschen. Zool. Anz. xxiii, pp. 76-84, 2 figg.
173. —. Eine Prioritätsfrage. T. c. p. 85.
174. —. *Tetrabothrium cylindraceum* Rud. und das Genus *Tetrabothrium*. Centrbl. Bakter. xxvii, pp. 362-366, 4 figg.
175. —. *Tænia africana* n. sp., eine neue Tænie des Menschen aus Afrika. Op. cit. xxviii, pp. 485-490, 13 figg.
176. —. Helminthologische Beobachtungen. Arch. mikr. Anat. lvi, pp. 362-376, Taf. 15.
177. —. *Tænia horrida*, *Tetrabothrium macrocephalum* und *Heterakis distans*. Arch. Naturg. lxvii, pp. 1-10, Taf. 1 & 2.
178. LOEB, J. Artificial parthenogenesis in Annelids (*Chaetopterus*). Science (n. s.) xii, p. 170.
179. LÖNNBERG, E. Contributions to the biology of the Caspian Sea. Ofv. Ak. Forh. 57, pp. 13-29.  
Annelids, pp. 25 & 26.
180. LOOSS, A. Nachträgliche Bemerkungen zu den Namen der von mir vorgeschlagenen Distomidengattungen. Zool. Anz. xxiii, pp. 601-608.
181. —. Notizen zur Helminthologie Egyptens. iii. Die Sclerostomen der Pferde und Esel in Egypten. Centrbl. Bakter. xxvii, pp. 150-160 & 184-192.
182. LÜHE, M. Untersuchungen über die Bothriocephaliden mit marginalen Genitalöffnungen. Zeitschr. wiss. Zool. lxviii, pp. 43-112, Taf. 4-7.
183. —. Zur Abwehr [gegen Ariola]. Zool. Anz. xxiii, pp. 533 & 534.
184. —. Über *Bothrimonus* Duv. und verwandte Bothriocephaliden. T. c. pp. 8-14.
185. —. Über die Gattung *Podocotyle* (Duj.) Stoss. T. c. pp. 487-492.
186. —. Über Distomen aus der Gallenblase von Mittelmeerfischen. T. c. pp. 504-509.
187. —. Beiträge zur Kenntnis der Bothriocephaliden. iii. Die Bothriocephaliden der landbewohnenden Reptilien. Centrbl. Bakter. xxvii, pp. 209-217 & 252-258, 3 figg.
188. —. Ueber einige Distomen aus Schlangen und Eidechsen. Op. cit. xxviii, pp. 555-566.
189. —. Ueber *Distomum philodryadum* West. T. c. p. 743.
190. MAGALHÃES, P. S. DE. Notes d'helminthologie brésilienne. Arch. parasit. iii, pp. 34-69, 25 figg.
191. —. Eine sehr seltene Anomalie von *Tænia solium*. Centrbl. Bakter. xxvii, pp. 66-68, 1 fig.

192. MASTERMANN, A. T. On the Diplochorda. iii. The early development and anatomy of *Phoronis buskii* McL. Quart. J. Micr. Sci. xliii, pp. 375-418, pls. 18-21.
193. MATTHEW, G. F. Studies on Cambrian faunas, No. 3. Upper Cambrian fauna of Mount Stephen, British Columbia. The Trilobites and Worms. Tr. R. Soc. Canada (2) v, Sect. 4, pp. 39-66.
194. —. Studies on Cambrian faunas, No. 4. Fragments of the Cambrian faunas of Newfoundland. T. c. pp. 67-95.
195. —. The Etcheminian fauna of Smith Sound, Newfoundland. T. c. pp. 97-119.
196. MAUPAS, E. Modes et formes de reproduction des Nématodes. Arch. Zool. exp. (3) viii, pp. 463-624, pls. xvi-xxvi. With index.
197. MAYER, A. G. An Atlantic "Palolo," *Staurocephalus greguricus*. Bull. Mus. Harvard xxxvi, pp. 1-14, pls. 1-3.  
Cf. EHLERS (102).  
MAZZA, F. See [PARONA e MAZZA (239).]
198. McINTOSH, W. C. A monograph of the British Annelida. Part ii. Polychæta. *Amphinomida* to *Sigalionida*, pp. 215-442, pls. xxiv-xlii, text-figg. Ray Society.
199. —. Notes from the Gatty Marine Laboratory, St Andrews.
  1. On the Reproduction and Development of *Pholoë minuta* O. Fabr.
  2. On the British *Nephtydidæ*.
  3. On *Nephtys (Aglaothanus) inermis* Ehlers, from the 'Porcupine.'
  4. On the *Nephtydidæ* of the Gulf of St. Lawrence, Canada.
 Ann. Nat. Hist. (7) v, pp. 254-268, pls. vii & viii, and 2 figg.
200. MENSCH, P. C. On the variation in the position of the stolon in *Autolytus*. Biol. Bull. i, pp. 89-93, 1 fig.
201. —. On the life-history of *Autolytus cornutus* and alternate generation in Annelids. Amer. Natural. xxxiv, pp. 165-172.
202. —. Stolonization in *Autolytus varians*. J. Morphol. xvi, pp. 269-322, pls. 13 & 14.
203. METALNIKOFF, S. Ueber *Sipunculus*. Zeitschr. wiss. Zool. lxxviii, pp. 261-322, Taf. xvii-xxii.
204. METCALF, M. M. Willey on the Enteropneusta. Amer. Natural. xxxiv, pp. 123-129.
205. MICHAELSEN, W. Terricolen (Nachtrag). Hamburg. Magalhaens Sammelreise, Lief. v-3, Hamburg, 1900, 28 pp.
206. —. Die Lumbriciden-Fauna Nordamerikas. Abh. Ver. Hamburg xvi, 22 pp.
207. —. Die Lumbriciden-Fauna Eurasiens. Annuaire Mus. St. Petersb. v, pp. 213-225.
208. —. Eine neue *Eminoscolex*-Art von Hoch-Sennaar. 2 Beiheft Hamburg Anst. xvii, 1899 (1900), pp. 1-5.
209. —. Oligochæta. Das Tierreich. Lief. x.

210. [MICHAELSEN, W.] Zur Kenntnis der Geoscoleciden Südamerikas. Zool. Anz. xxiii, pp. 53-56.
211. —. Zur Nomenclatur der Oligochæten, eine Rechtfertigung. T. c. pp. 566-568.
212. —. Die Terricolen-Fauna Columbiens. Arch. Naturg. lxvi, pp. 231-266, 1 text-fig.
213. MINGAZZINI, P. Nuove ricerche sulle cisti degli Elminti. Arch. parasit. iii, pp. 134-162, 12 figg.
214. MINKIEWICZ, R. Petites études morphologiques sur le "limno-plancton." Zool. Anz. xxiii, pp. 618-623, 18 figg.
215. MONTGOMERY, T. H., Jr. Gordiacea from the Cope collection. Biol. Bull. i, pp. 95-98, 4 figg.
216. MONTI, C. RINA. Nuove ricerche sul sistema nervoso delle Planarie. Monit. Zool. ital. xi, pp. 336-344, 6 figg. Abstract in Supp. p. 37.
217. —. L'hétéromorphose chez les dendrocèles d'eau douce et en particulier chez la *Planaria alpina*. Arch. ital. Biol. xxxiii, pp. 217-224.
218. —. La rigenerazione nelle Planarie marine. Mem. Ist. Lombardo xix-1, pp. 1-16, 2 pls.
219. MONTICELLI, F. S. Sui parassiti del *Regalecus glesne*. Monit. Zool. ital. xi, Supp. pp. 36 & 37.
220. MOORE, J. P. Note on Oka's biannulate Leech. Zool. Anz. xxiii, pp. 474-477, 1 fig.
221. —. A description of *Microbdella biannulata* with especial reference to the constitution of the leech somite. P. Ac. Philad. 1900, pp. 50-73, pl. 6.
222. MORGAN, T. H. Regeneration: old and new interpretations. Biol. Lect. Wood's Holl 1899, Boston 1900, pp. 185-208, 4 figg.
223. —. Regeneration in *Bipalium*. Arch. Entwicklmech. ix, pp. 563-586, 16 figg.
224. —. Regeneration in Planarians. Op. cit. x, pp. 58-119, 31 figg.
225. MRÁZEK, A. Über das Vorkommen einer Süßwassernemertine (*Stichostemma græcense* Böhm.) in Böhmen, mit Bemerkungen über die Biologie des Süßwassers. SB. Bohmisch. Ges. 1900, No. iv, 7 pp.
226. —. Die Samentaschen von *Rhynchelmis*. T. c. No. xxxv, 5 pp., 1 Taf.  
Communication between spermathecae and oesophagus in genera *Sutroia* and *Rhynchelmis*.
227. NASSONOW, N. Zur Kenntniss der phagocytären Organe bei den parasitischen Nematoden. Arch. mikr. Anat. lv, pp. 488-513, pls. 26-28.
228. NEVEU-LEMAIRE, M. Sur deux Ténias trièdres. Arch. parasit. iii, pp. 492-508, 10 figg.
229. NEWBIGIN, M. I. Notes on Polychætes. Commun. Millport Stat. i, Nov. 1900, pp. 3-8.
230. —. On British species of *Siphonostoma*. Ann. Nat. Hist. (7) v, pp. 190-195, pl. iv.

231. NICKERSON, W. S. Note on *Distomum arcanum* (n. sp.) in American Frogs. Amer. Natural. xxxiv, pp. 811-815, 1 fig.
232. ODHNER, T. *Aporocotyle simplex* n. g. n. sp., ein neuer Typus von ektoparasitischen Trematoden. Centrbl. Bakter. xxvii, pp. 62-66, 1 fig.
233. —. *Gymnophallus*, eine neue Gattung von Vogeldistomen. Op. cit. xxviii, pp. 12-23, 4 figg.
234. OFENHEIM, E. v. Ueber eine neue Distomidengattung. Zeitschr. Naturw. Bd. 73, pp. 145-186, Taf. iii and 4 figg.
235. ORTMANN, A. E. Synopsis of the collections of Invertebrate fossils made by the Princeton expedition to Southern Patagonia. Amer. J. Sci. (4) x, pp. 368-381.
236. PADER, J. Le Spiroptère réticulé. Bull. Soc. Nimes xxvii, pp. 59-64.
237. PARONA, C. Di alcuni Elminti del Museo Nacional di Buenos Aires. Comun. Mus. Buenos Aires i, pp. 190-197, 1 fig.
238. —. Di alcune anomalie nei Cestodi ed in particolare di due Tenie saginate moniliformi. Atti Soc. Ligustica xi, pp. 269-276, Tav. iv.
239. — e MAZZA, F. Sulla castrazione temporanea delle Aterine dovuta ad elmintiasi. T. c. pp. 231-237, Tav. iii. Also Monit. Zool. ital. Supp. xi, p. 13.
240. PEARL, R. A variation in the genital organs of *Lumbricus agricola* Hoffm. Anat. Anz. xviii, pp. 123-127, 1 fig.
241. PÉGOT, G. Sur un cas d'infection parasitaire chez la grenouille rousse et ses conséquences biologiques. C.R. Soc. Biol. lii, pp. 162-164.
242. —. Sur quelques anomalies présentées par l'écrevisse, la sangsue, la roussette et le mouton. T. c. pp. 322-324.
243. PIANA, G. P. e STAZZI, P. Elminti intestinali di una Elefantessa. Arch. parasit. iii, pp. 509-529, 14 figg.
244. PICHLER, K. Ein Fall von *Echinococcus multilocularis* aus Kärnthen (Zeitschr. f. Heilk. Bd. xix, Heft. 5 u. 6). Abstract in Centrbl. Bakter. xxvii, p. 468.
245. PIRL, —. Das Vorkommen von Trichinen im Hundefleische und deren Bedeutung für die Fleischschau (Zeitschr. für Fleisch- und Milchhygiene. Jahrg. x, 1899, pp. 5-8). Abstract in Centrbl. Bakter. xxvii, p. 118.
246. PRATT, H. S. Synopses of North-American Invertebrates. xii. The Trematodes. Part i. The Heterocotylea or Monogenetic forms. Amer. Natural. xxxiv, pp. 645-662, 50 figg.
247. PRENANT, A. Contribution à l'étude des cellules ciliées et des éléments analogues. 1. Cellules visuelles des Hirudinées. Cils intracellulaires. Arch. anat. micr. iii, pp. 101-121, pl. v.
248. PREVITERA, S. Due casi probabili di *Tenia leptocephala* nei minatori delle Zolfare. Bull. Acc. Gioen. March 1900, Fasc. lxiii, pp. 9-11.
249. PROWE, —. *Ancylostomiasis* in Central-Amerika. (Virchow's Archiv. Bd. clvii, 1899, pp. 458-474.) Abstract in Centrbl. Bakter. xxvii, pp. 83 & 84.
250. PUNNETT, R. C. On a collection of *Nemertean* from A. Quart. J. Micr. Sci. xlv, pp. 111-129, pls. 5



251. [PUNNETT, R. C.] On some South Pacific Nemertines collected by Dr Willey. Zool. Results (Willey), Pt. v, pp. 569-584, pls. 57-61.
252. —. On some Nemerteans from Torres Straits. P. Zool. Soc. London 1900, pp. 825-831, pls. 54 & 55.
253. RAILLIET, A. Trématodes hépatiques des Oiseaux. C.R. Soc. Biol. lii, pp. 239-242.
254. —. Essais de traitement de l'helminthiase intestinale des poules. (Recueil de médecine vétérinaire. viii sér. T. vii, 1900, pp. 36-43.) Abstract in Centrbl. Bakter. xxviii, pp. 154 & 155.
255. —. Observations sur les Uncinaires des Canidés et des Félidés. Arch. parasit. iii, pp. 82-95.
256. —. Observations sur quelques Sclérostomiens des Ruminants. T. c. pp. 102-107.
257. RANSOM, B. H. A new avian cestode—*Metroliasthes lucida*. Tr. Amer. Micr. Soc. xxi, pp. 213-226, pls. xiii & xiv. Reprint, Stud. Univ. Nebraska, No. 36.
258. RÁTZ, St. v. Drei neue Cestoden aus Neu-Guinea. Vorläufige Mitteilung. Centrbl. Bakter. xxviii, pp. 657-660.
- 258A. —. Trois nouveaux Cestodes des Reptiles. C.R. Soc. Biol. lii, pp. 980 & 981. [Same as (258).]
259. —. Parasitologische Notizen (Zeitschr. f. Fleisch-und Milchhygiene, Jahrg. x, H. No. 8). Abstract in Centrbl. Bakter. xxviii, pp. 516 & 517.
260. —. Ueber *Distomum saginatum* n. sp., Vorläufige Mitteilung. T. c. pp. 437-439.
261. —. Neue Nematoden in der ungarischen Fauna. Termes. Fuzetek xxiii, pp. 178-186, pl. 5.
262. RÉNON, L. Echinocoques multiloculaires (Alvéolaires) observés chez un Français. C.R. Soc. Biol. lii, pp. 167 & 168.
263. RETZIUS, G. Zur Kenntniss des sensiblen und des sensorischen Nervensystems der Würmer und Mollusken. Biol. Untersuch. (n. F.) ix, pp. 83-96, pls. 16-22.
264. RIBAUCOURT, E. DE. Sur quelques détails de l'anatomie comparée des Lombricides. C.R. Soc. Biol. lii, pp. 299 & 300.  
RINA MONTI. [See MONTI, C. RINA (216).]
265. RITTER, W. E. *Harrimania maculosa*, a new genus and species of Enteropneusta from Alaska, with special regard to the character of its notochord. Papers from the Harriman Alaska Expedition ii. P. Washington Ac. ii, pp. 111-132, pl. vii.
266. — & CONGDON, E. M. On the inhibition by artificial section of the normal fission plane in *Stenostoma*. P. Calif. Ac. (3) ii, pp. 365-376, pl. 17.
267. RIZZO, A. Ricerche sull' attacco di alcune Uncinarie alla parete dell' intestino. Rend. Acc. Lincei (5) ix, sem. 2, pp. 107-115, 2 figg.
268. ROSA, D. On the Earthworms from Christmas Island. [In] ANDREWS, C. W., Monogr. Christmas Island. Reprinted from Ann. Nat. Hist. (7) ii, 1898.
269. —. *Geoscolex bergi* n. sp. Comun. Mus. Buenos Aires i, pp. 209-211.

270. ROSSETER, T. B. The anatomy of *Dicranotenia coronula*. J. Quekett Club (2) vii, pp. 355-370, pls. 18 & 19.
271. ROULE, L. Remarques sur un travail récent de M. Masterman concernant le développement embryonnaire des Phoronidiens. Zool. Anz. xxiii, pp. 425-427.
272. —. Considerations générales sur l'histolyse phagocytaire de l'Actinotroque. C.R. Soc. Biol. lii, pp. 441 & 442.
273. —. Remarques sur la Métamorphose de la larve Actinotroque des Phoronidiens. T. c. pp. 439 & 440.
274. —. Sur les affinités zoologiques des Phoronidiens et des Némertines. C.R. Ac. Sci. cxxx, pp. 927-930.
275. —. Étude sur le développement embryonnaire des Phoronidiens. Ann. Sci. nat. (sér. 8) xi, pp. 51-250, pls. 2-16.
276. ROUSSELET, C. F. Note on the genus *Lacinularia*. J. Quekett Club (2) vii, pp. 313 & 314.
277. SABRAZÉS, J. et KOEHLER, D. Régurgitation matutinale d'anneaux de Ténia. Arch. parasit. iii, pp. 578-588.
278. SABUSSOW, H. Mittheilungen über Turbellariestudien. II. Zur Kenntnis des Körperbaues von *Enterostoma mytili* v. Graff. Zool. Anz. xxiii, pp. 256-263.
279. SAINT-REMY, G. Sur le développement embryonnaire des Cestodes. C.R. Ac. Sci. cxxx, pp. 930-932.
280. —. Contributions à l'étude du développement des Cestodes. I. Le développement embryonnaire dans le genre *Anoplocephala*. Arch. parasit. iii, pp. 292-315, pl. 7.
281. SCHARFF, R. F. *Rhynchodemus howesi*: a new European species of terrestrial planarian worm. J. Linn. Soc. xxviii, pp. 33-42, pl. 6, 3 text-figg.
282. —. The Irish species of Land Planarians. Irish Natural. ix, pp. 215-218, 3 figg.
283. SCHEURLÉN, —. Vorzeigung einer Hasenlunge mit *Strongylus communatus* und von Milzbrandkulturen. Jahresh. Ver. Württemb. 56, pp. xlii & xliii.
284. SCHLEGEL, —. Die durch den *Strongylus capillaris* verursachte Lungenwurmseuche der Ziege. Eine klinische, pathologisch-anatomische und zoologische Studie. (Arch. f. wissenschaftl. u. prakt. Tierheilkunde. Bd. xxv, Heft 3 u. 4.) Abstract in Centrbl. Bakter. xxvii, pp. 468-471.
285. SCHOCKAERT, R. Nouvelles recherches sur la maturation de l'ovocyte de premier ordre du *Thysanozoon brocchi*. Anat. Anz. xviii, pp. 30-33, 6 figg.
286. \*SELIGO, A. Untersuchungen in den Stuhmer Seen. 10 pls., 8vo, Leipzig, 1900.
287. \*SETTI, E. L'apparecchio digerente dell' *Aphrodite aculeata* L. Ric. Labor. anat. Roma vii, pp. 297-326, pls. 15 & 16.
288. SHIPLEY, A. E. On some parasites found in *Echinus ceculentus* L. Quart. J. Micr. Sci. 44, pp. 281-290, pl. 18.
289. —. A description of the Entozoa collected by Dr Willey during his sojourn in the Western Pacific. Zool. Results (Willey), pt. pp. 531-568, pls. 54-56, and text-figg.

290. [SHIPLEY, A. E.] Entozoa. Fauna Hawaiiensis ii, Pt. iv, pp. 427-441, pls. 13 & 14.
291. SLUITER, C. P. Gephyriens (*Sipunculides* et *Echiurides*) provenant des campagnes de l'Hirondelle et de la Princesse-Alice, 1886-1897. Campagnes Scient. (Prince de Monaco) Fasc. xv, 30 pp., 3 pls.
292. SMITH, FRANK. Notes on species of North American Oligochaeta. III. List of species found in Illinois, and descriptions of Illinois *Tubificidae*. Bull. Illinois Lab. v, pp. 441-458, pls. 39 & 40.
293. —. Notes on species of North American Oligochaeta. IV. On a new Lumbricid genus from Florida, with additional notes on the nephridial and circulatory systems of *Mesoporodrilus asymmetricus* Smith. T. c. pp. 459-478, pl. 41.
294. SMITH, J. C. *Notogonia ehrenbergii* Perty. Tr. Amer. Micr. Soc. xxi, 1899, pp. 95 & 96, pl. vi, fig. 8.
295. SOLLAS, W. J. Fossils in the Oxford University Museum. III. *Ich-nium wattii*, a worm-track from the States of Bray Head; with Observations on the genus *Oldhamia*. Quart. J. Geol. Soc. 56, pp. 273-286, pls. 17-19.
296. SONSINO, PR. Sugli ultimi risultati sperimentali concernenti il ciclo vitale della *Filaria bancrofti* nella zanzara, in confronto con quelli sul ciclo vitale del parassita della malaria (Giorn. della R. Accad. di Medicina di Torino, vol. v, 1899, Fasc. 12). Abstract in Centrbl. Bakter. xxviii, pp. 152 & 153.
297. SORBY, H. C. On the Preparation of Marine Worms as Microscopical Objects. J. R. Micr. Soc. 1900, pp. 1-5.
298. SQUINABOL, S. Sulla vera natura delle Helminthoida. Atti Soc. Veneto-Trent. iv (2) 1900, pp. 33-39, 3 figg.
299. STAFFORD, J. Some undescribed Trematodes. Zool. Jahrb. Syst. xiii, pp. 399-414, pl. 26.
300. STEINHAUS, O. Chætognathen. Hamburg. Magalhaens Sammelreise, Lief. v-2, Hamburg 1900, 10 pp.  
The author refers to an apparently unrecorded paper of his published in 1896. Die verbreitung der Chætognathen im südatlantischen und indischen Ocean. Kiel 1896, pp. 39-47.
301. STEUER, A. Das Zoo-Plankton der "alten Donau" bei Wien. Vorläufige Mitteilung. Biol. Centrbl. xx, pp. 25-32.
302. STEWART, F. H. On the nephridium of *Nephtys caesi* Fabr. Ann. Nat. Hist. (7) v, pp. 161-164, pls. ii & iii.
303. —. Note on a variation in the number of genital pouches in *Thalassema neptuni* Gaertner, pp. 218 & 219. Op. cit. vi.
304. STIEDA, A. Durchbohrung des Duodenums und des Pankreas durch eine Tänie. Centrbl. Bakter. xxviii, pp. 430-437.
305. \*STOSSICH, M. Contributo allo studio degli Elminti. Trieste, 1900, 8vo.  
STROBELL, E. C. [See FOOT, K. & STROBELL, E. C. (108).]
306. STUDNIČKA, F. K. Ueber Flimmer und Cuticularzellen mit besonderer Berücksichtigung der Centrosomenfrage. SB. Bohmisch Ges. 1899, No. xxxv, 22 pp., 1 Taf. and 4 figg.  
*Aecaris, Balanoglossus, Spirographia.*

307. SUKATSCHOFF, B. Beiträge zur Entwicklungsgeschichte der Hirudineen. 1. Zur Kenntnis der Urnieren von *Nephele vulgaris* Moqu. Tand. und *Aulastomum gulo* Moqu. Tand. Zeitschr. wiss. Zool. lxvii, pp. 618-639, Taf. 34 & 35 u. 3 text-figg.
308. SUPINO, F. Sopra una Filaria dell' occhio umano. Rend. Acc. Lincei (5) ix, pp. 85-91, 3 figg.
309. SWEET, G. On the structure of the Spermiducal Glands and associated parts in Australian Earthworms. J. Linn. Soc. xxviii, pp. 109-139, pls. 14 & 15.
310. TATE, R. On the occurrence of Marine Fossiliferous Rocks at Kerguelen Island. Tr. R. Soc. S. Austral. xxiv, pp. 104-108, pls. 2 & 3.
311. THEOBALD, F. The gape worm and the white intestinal worms of poultry. (The Journal of the Board of Agriculture, vol. vi, 1899, No. 2, pp. 157-165.) Abstract in Centrbl. Bakter. xxvii, p. 755.
312. THILENIUS, G. Bemerkungen zu den Aufsätzen der Herren Krämer und Friedlaender über den sogenannten *Palolo*. B. C. xviii & xix. Biol. Centrbl. xx, pp. 241-243.
313. THOMPSON, C. B. Preliminary description of *Zygeupolius litoralis*, a new genus and new species of Heteronemertean. Zool. Anz. xxiii, pp. 151-153.
314. —. *Carinoma tremaphoros*, a new Mesonemertean species. T. c. pp. 627-630, 1 fig.
315. THOMSON, W. M. An account of a large Branchiate Polynoid from New Zealand, *Lepidonotus giganteus* Kirk. With an introduction by Prof. W. B. Benham. P. Zool. Soc. London 1900, pp. 974-986, pls. 60-62.  
TODD, R. A. [See ALLEN & TODD (1).]
316. TOWER, W. L. The nervous system in the Cestode *Moniezia expansa*. Zool. Jahrb. Anat. xiii, pp. 359-384, pls. 21-26.
317. TREADWELL, A. L. Lateral line organs in *Eunice auriculata*, n. sp. Science (n. s.) xii, pp. 342 & 343, 2 figg.
318. VEJDOVSKÝ, F. Noch ein Wort über die Entwicklung der Nephridien. Zeitschr. wiss. Zool. lxvii, pp. 247-254, Taf. 13.
319. VERRILL, A. E. Additions to the Turbellaria, Nemertina, and Annelida of the Bermudas, with revisions of some New England genera and species. Tr. Connect. Ac. x, pp. 595-672, pl. 70 and 2 text-figg.  
Illustrations deferred to vol. xi.
320. VIGNON, P. Différenciations cytoplasmiques, cils vibratiles et cuticules. Arch. zool. exp. Notes (3) viii, pp. iii-xviii.  
References to *Gordius* and *Naia*.
321. —. Les Cils vibratiles. Causeries Scient. Soc. zool. France 1900, pp. 37-76, text-figg.
322. VOIGT, W. Einfluss der Temperatur auf die Fortpflanzungsverhältnisse bei einem Strudelwurme, *Polycelis cornuta*. SB. niederrhein. Ges. 1900, pp. 19-21.
323. VOLZ, W. Beitrag zur Kenntnis der Naturg. lxvi, pp. 115-174, pls. 6-8, 4 t

324. [VOLZ, W.] Die Verbreitung einiger Turbellarien in den Bächen der Umgebung von Aarberg. Mt. Ges. Bern (1899) 1900, Nos. 1463-1477, pp. 66-82, Map and 3 figg.
325. VUILLEMIN, P. Cancer et tumeurs végétales. Bull. Soc. Nancy seances (3) 1, pp. 37-62.  
Reference to *Heterodera radiculicola*.
326. WAGNER, F. v. Beiträge zur Kenntniss der Reparationsprocesse bei *Lumbriculus variegatus* Gr. Zool. Jahrb. Anat. xiii, pp. 603-682, Taf. 41-44.
327. WARD, H. B. A comparative study in methods of plankton measurement. Tr. Amer. Micr. Soc. xxi, pp. 227-247, pls. xv-xvii.  
Bibliography.
328. —. Notes on the parasites of the Lake Fish. III. On the structure of the copulatory organs in *Microphallus*, nov. gen. Op. cit. xxii, pp. 175-187, 1 pl.
329. WATASÉ, S. Protoplasmic contractility and Phosphorescence. Biol. Lect. Wood's Holl 1898, Boston 1899, pp. 177-192.  
*Chaetopterus* etc., p. 179.
330. WESENBERG-LUND. Von dem Abhängigkeitsverhältnis zwischen dem Bau der Planktonorganismen und dem spezifischen Gewicht des Süßwassers. Biol. Centrbl. xx, pp. 606-619 and 644-656.
331. WESKI, O. Mitteilungen über *Distomum lancea* Dies. Centrbl. Bakter. xxvii, pp. 579-583, 1 fig.
332. WHIPPLE, G. C. *Chlamydomonas* and its effect on water supplies. Tr. Amer. Micr. Soc. xxi, pp. 97-102, pl. vii.  
List of Rotifers in the reservoir of the Long Island water supply.
333. WHITFIELD, R. P. List of fossils, types and figured specimens used in the palæontological work of R. P. Whitfield, showing where they are probably to be found at the present time. Ann. N. York Ac. xii, pp. 139-186.  
*Annelida*, p. 180.
334. WILLEY, A. On *Macdovia iricolor* (Montagu). J. Mar. Biol. Ass. (n. s.) vi, pp. 98-100.
335. WILLIAMS, S. R. The specific gravity of some freshwater animals in relation to their habits, development, and composition. Amer. Natural. xxxiv, pp. 95-108.
336. WILSON, C. B. Our North-American Echiurids. A contribution to the habits and geographical range of the group. Biol. Bull. i, pp. 163-178, 5 figg.
337. —. The habits and early development of *Cerebratulus lacteus* (Verrill). A contribution to physiological morphology. Quart. J. Micr. Sci. xliii, pp. 97-198, pls. 9-11.
338. WOLFFHÜGEL, K. Beitrag zur Kenntnis der Vogelhelminthen. [Inaug.-Diss.] Freiburg-i-Br. 1900, 204 pp., 7 Taf. Abstract by FURHRMANN in Centrbl. Bakter. xxvii, pp. 841 & 842.
339. —. *Drepanidotænia lanceolata* Bloch. Op. cit. xxviii, pp. 49-56, 6 figg.
340. ZIMMERMANN, A. Nematodes of Coffee-plant. J. R. Micr. Soc. 1900, p. 676.  
Abstract only.

341. ZIMMERMANN, O. E. R. Einführung von Wurmkeimen durch Schmutzwasser. Ber. Ges. Chemnitz xiv, pp. xiv-xvi.
342. ZSCHOKKE, F. Die Tierwelt der Hochgebirgsseen. Denk. Schweiz. Ges. 1900, 400 pp., 8 pls. and 4 maps.  
Vermes, pp. 77-115.
343. —. *Myxobolus psorospermicus* Thélohan im Vierwaldstättersee. Mt. Ges. Luzern. iii Heft 1898-1900, pp. 441 & 442.  
References to Cestodes.
344. ZYKOFF, W. Das Potamoplankton der Wolga bei Saratow. Zool. Anz. xxiii, pp. 625-627.
345. —. Beitrag zur Turbellarienfauna Russlands. T. c. pp. 634 & 635.

## II. SUBJECT INDEX.

## VERMES.

## GENERAL SUBJECT.

- Aetiology of intestinal helminthiasis, p. 485; BLANCHARD, Arch. parasit. iii.
- Cardiac Body of Annelids; BOCK, Rev. Suisse Zool. viii, p. 107: compared with that in the larva of the insect *Phalacrocerca replicata* (L.); BENGTSSON, Bih. Svenska Ak. xiv, Afd. iv, No. 3, p. 18.
- Cilia. Interpretation of basilar granulations; blepharoplasts and centrosomes; VIGNON, Causeries Scient. Soc. Zool. France 1900, p. 37; STUDNÍČKA, SB. Bohmisch. Ges. 1899, No. xxiv.
- Coelom. History and Theories of the coelom; LANKESTER (186A).
- Metameric Segmentation, p. 509; BERNARD, Ann. Nat. Hist. (7) vi.
- Metamorphosis, p. 131; GIARD, C.R. Soc. Biol. lii.
- Pain-sensations; DEARBORN, Science (n.s.) xi.
- Parasitic Diseases. Inoculation through foul water; ZIMMERMANN, Ber. Ges. Chemnitz xiv, p. xiv.
- Parasitology. Of China and Japan, p. 5; BLANCHARD, Arch. parasit. iii: of Roumania; LEON, *ibid.* p. 228: of Brazil; MAGALHÃES, *ibid.* p. 34.
- Physiochemistry. Traces of copper in *Hirudo officinalis* etc.; DUBOIS, Ann. Soc. Linn. Lyon 1900, pp. 93-97: action of CO<sub>2</sub> on *Naïs* and *Hirudo*; *ibid.* pp. 127-133.
- Pseudohelminthiasis*. Radulae of *Patella vulgata*, p. 98; CHEVREL et PORET, Bull. Soc. Normand. (5) iii.
- Specific Gravity; WILLIAMS, Amer. Natural. xxxiv, p. 95.
- †Helminthoida; SQUINABOL, Atti Soc. Veneto-Trent. iv (2).
- Caspian Sea. Annelida, p. 25, *Amphictis* and *Araucobdella*; LÖNNBERG, Ofv. Ak. Forh. 57.
- Sandwich Islands. Entozoa; SHIPLEY, Fa. p. 427.

## ANNELIDA.

## GEPHYREA.

## GENERAL BIOLOGY.

Histology of *Sipunculus*; ciliated corpuscles of the blood-system are not parasitic organisms (cf. last year's Record); METALNIKOFF, *Zeitschr. wiss. Zool.* lxxviii, p. 261.

Structure and Affinities of *Echiurus uncinatus* v. Dr., p. 77; EMBLETON, Tr. Linn. Soc. London (2) viii.

Toxic Reactions of *Sipunculus nudus*; CAPOBIANCO, Rend. Acc. Napoli (3) vi, p. 237.

Variation. Genital Pouches of *Thalassema neptuni*, p. 218; STEWART, Ann. Nat. Hist. (7) vi.

## DISTRIBUTION.

Atlantic Ocean. Bathymetrical distribution of Gephyrea, with description of 13 species of which 5 are new; SLUITER, Campagnes Scient. (Prince de Monaco) Fasc. xv.

N. America. Echiuridæ, Coast of Maine, p. 163; WILSON, Biol. Bull. i. Bermudas. *Gephyrea*; VERRILL, Tr. Connect. Ac. x, p. 669.

## SYSTEMATIC.

*Aspidosiphon spinulosum*, n. sp., p. 670; VERRILL, Tr. Connect. Ac. x.

*Echiurus chrysacanthophorus* Pourt. = *E. pallasii* Guérin-Ménéville, p. 170;

WILSON, Biol. Bull. i.

*E. uncinatus* v. Dr.; EMBLETON, Tr. Linn. Soc. London (2) viii, p. 77.

*Golfingia elongata*, n. sp., p. 670; VERRILL, Tr. Connect. Ac. x.

*Phascolion hironellei*, p. 7, *alberti*, p. 9, n. spp.; SLUITER, Campagnes Scient. (Prince de Monaco) Fasc. xv.

*Phascolosoma reconditum*, n. sp., p. 11; SLUITER, t. c.

*Phymosoma*, n. n. proposed under misapprehension for *Phymosoma* Qfg = *Physco[n]soma* Selenka; LAMBERT, J., Bull. Soc. Yonne 1899, Part II, p. 54; see No. 187, Echinoderm Record and remarks by Dr Bather.

*Sipunculus nitidus*, p. 14, n. sp.; SLUITER, Campagnes Scient. xv.

*S. robustus* in North Borneo; HANITSCH, J. Straits Asiat. Soc. No. 34, July 1900, p. 51.

*Thalassema erythrogrammon* Max Müller, from the Bahamas, hitherto known from the Oriental Region, p. 176; WILSON, Biol. Bull. i.

*T. indivisum*, p. 18, n. sp.; SLUITER, Campagnes Scient. (Prince de Monaco) Fasc. xv.

## POLYCHÆTA.

## GENERAL BIOLOGY.

Monograph. Aphroditea; MCINTOSH, Ray Soc.; DARBOUX, Bull. Sci. France Belgique xxxiii, p. 1. Arenicolidæ; GAMBLE & ASHWORTH, Quart. J. Micr. Sci. xliii, p. 419.

Anatomy. Digestive and excretory Organs of *Aphrodita aculeata*, p. 250, figg. 16-18: *Harmothoe* and *Polynoe*, pp. 270 & 271; MCINTOSH, Ray Soc.

Galvanotaxis (kathodic) in larvæ of *Dasychone lucullana*, p. 469; CARL-GREN, Arch. Physiol. 1900.

Affinities of Histriobdellidæ, p. 324; HASWELL, Quart. J. Micr. Sci. xliii.

Anatomy. *Stratiodrilus*, a new Histriobdellid, p. 300; HASWELL, t. c.

Bionomics. Habits, Habitats, Commensalism, etc. of Amphinomidæ and Aphroditidæ; MCINTOSH, Ray Soc.

Bipolar Theory. Additional list of bipolar Polychæta, p. 207; EHLERS, Nachr. Ges. Göttingen 1900.

Cleavage in *Arenicola* and *Sternaspis*, p. 587; CHILD, Arch. Entwick-mech. ix.

*Serpulorbis squamigerus* Carpenter; HOLMES, S. J., Biol. Bull. i.

Life-history. *Autolytus*; MENSCH, Amer. Natural. xxxiv, p. 165.

Stolonization in *Autolytus varians*; MENSCH, J. Morphol. xvi, p. 269.

Commensalism of *Eunice harassii* with *Ostrea edulis*—an example of facultative commensalism, i.e. temporary and exceptional, p. 415; GRAVIER, Bull. Mus. Paris 1900.

Development. *Harmothoe imbricata*, p. 322, figg. 27-30; MCINTOSH, Ray Soc.: *Pholoe minuta* Fabr. p. 254; MCINTOSH, Ann. Nat. Hist. (7) v.

Digestive Canal of *Aphrodite aculeata*; SETTI, Ric. Labor. anat. Roma vii, p. 297.

Excretion. Structure and topography of the nephridia and manner of excretion of solid matter by means of phagocytes in *Nephtys caeca*; STEWART, Ann. Nat. Hist. (7) v.

Physiology. Demonstration of the secretory and excretory functions of the intestinal cæca of Aphroditidæ; DARBOUX, Bull. Soc. Nîmes xxvii, p. 53; also Bull. Sci. France Belgique xxxiii.

Nephridia. Alciopinæ, p. 700: Phyllodocinæ, p. 706: Syllidæ, p. 708: Amphinomidæ, p. 712: Hesionidæ, p. 713: Nephthyidæ, p. 715: Polygordiidæ, p. 715: summary of facts described in Pts. I, II, and III, p. 718: importance in classification, p. 739: nomenclature, p. 741; GOODRICH, Quart. J. Micr. Sci. xliii.

Palolo. THILENIUS, Biol. Centrbl. xx.

Palolo in the Tortugas; MATER, Bull. Mus. Harvard xxxvi, p. 1; VERRILL, Tr. Connect. Ac. x, p. 650; EHLERS, Nachr. Ges. Göttingen 1900, p. 397.

Parasitology. CAULLERY & MESNIL, C.R. Ass. Franc. xxviii (ii) p. 491; DARBOUX, Bull. Sci. France Belgique xxxii; GRAVIER, Bull. Mus. Paris 1900, p. 415.

Parthenogenesis artificially procured in *Chætopterus* in two ways, (1) by osmotic fertilisation (increase in concentration of surrounding solution), (2) by chemical fertilisation (change in constitution of surrounding solution); LOEB, Science (n.s.) xii, p. 170.

Phosphorescence. *Chætopterus*; WATASE, Biol. Lect. (1898) p. 179: *Aphroditidæ*; DARBOUX, Bull. Sci. France Belgique xxxiii.

Sense-organs. Hemispherical bodies at bases of dorsal cirri of *Eunice auriculata*, n. sp.; TREADWELL, Science (n.s.) xii, p. 342.

Sensory System of *Nereis diversicolor*, p. 85, Taf. xvi-xx; RETZIUS, Biol. Untersuch. (n. F.) ix.

Sexual dimorphism in *Autolytus varians*, p. 90; MENSCH, Biol. Bull. i.

Technique. Preparation of Marine Worms, killing in glycerine (50%), washing in water, drying and mounting in Canada Balsam, p. 1; SORBY, J. R. Micr. Soc. 1900.

Tubicolous Annelids, p. 684; COUPIN, Rev. Scient. Sér. 4, xiii.

Variation. Number of teeth on the jaws *Nereis*, p. 129; HEFFERAN, Biol. Bull. ii: position of stolon in *Autolytus* and *Proceræa*; MENSCH, op. cit. i: eyes of *Harmothoe imbricata*, p. 316, figg. 25 & 26; MCINTOSH, Ray Soc.

Viviparity. *Syllis vivipara*, p. 106; GOODRICH, J. Linn. Soc. xxviii.



## DISTRIBUTION.

Atlantic Ocean. Distribution of *Alciopidae*, p. 28: *Tomopteridae*, p. 4  
APSTEIN, Plankton Exped. ii.

N. America. *Nephtydidæ* of Gulf of St. Lawrence; McINTOSH, *Ann. Nat. Hist.* (7) v.

Bermudas. *Polychæta*; VERRILL, *Tr. Connect. Ac.* x, p. 598.

British Isles. *Nephtydidæ*, nine species, with descriptions; McINTOSH, *Ann. Nat. Hist.* (7) v: *Amphinomidae* and *Aphroditidae*; McINTOSH, *R. Soc.*: species of *Siphonostoma*; NEWBIGIN, *Ann. Nat. Hist.* (7) v.

Clyde Area. NEWBIGIN, *Commun. Millport Stat.* i.

English Channel. *Polychæta*; HODGSON, *J. Mar. Biol. Ass. (n.s.)* p. 218; ALLEN & TODD, *op. cit.* p. 188; FAUVEL, *Mem. Soc. Cherbourg* xxxi, p. 305.

Valencia Harbour. Pelagic *Polychæta*, p. 686; BROWNE, *P. Irish* (3) v.

Magellan Straits. *Polychæta*, p. 206; EHLERS, *Nachr. Ges. Göttingen* 1900.

New Zealand. Polynoid, *Lepidonotus giganteus*, p. 974; THOMAS, *P. Zool. Soc. London* 1900.

Red Sea. *Polychætes*, p. 137; GRAVIER, *Arch. Mus. Paris* (4) ii.

Ternate. *Polychæt Fauna*, p. 91: nineteen species, of which two are new; FISCHLI, *Abh. Senckenb. Ges.* xxv.

†Bray Head. *Ichnium wattsi*, p. 273; SOLLAS, *Quart. J. Geol. Soc.* t.

†British Columbia. Cambrian Fauna, p. 39; MATTHEW, *Tr. R. Soc. Canada* (2) v, Sect. 4.

†Switzerland. Description of six species of fossil Serpulidae, p. 11  
GREPPIN, *Mem. Soc. pal. Suisse* xxvii.

†Newfoundland. Cambrian and Etcheminian Annelida, pp. 67 & 68; MATTHEW, *Tr. R. Soc. Canada*.

†Kerguelen Island. Fossil *Spirorbis* and *Serpula*, p. 105; TATE, *Tr. Soc. S. Austral.* xxiv.

†Patagonia. Fossil Worms, p. 369; ORTMANN, *Amer. J. Sci.* (4) x.

## SYSTEMATIC.

*Acanthiclepis*, n. n. for *Dasylepis* Mlgn. preoccupied, p. 311; McINTOSH, *Ray Soc.*

*A. asperrima* (Sars), p. 311; McINTOSH, t. c.

*Acholoë astericola* (Delle Chiaje); McINTOSH, t. c. p. 397; DARBO, *Bull. Sci. France Belgique* xxxiii, p. 140.

*Aglaurides erythræensis*, n. sp., p. 278; GRAVIER, *Arch. Mus. Paris* (4) i.

*Alciopa cantrainii* (D. Ch.), p. 7; APSTEIN, *Plankton Exped.* ii.

*Ammotrypane scaphigera*, n. sp., p. 218; EHLERS, *Nachr. Ges. Göttingen* 1900.

*Amphicteis invalida* in the Caspian Sea, p. 25; LÖNNBERG, *Ofv. Ak. F.* 57.

*Amphinome sericata*, n. sp., p. 95; FISCHLI, *Abh. Senckenb. Ges.* xxv.

*Amphitrite johnstoni* Mgn., p. 195, *edwardsi* Qfg., p. 196; ALLEN, *J. N. Biol. Ass. (n.s.)* vi.

*Antinoë sarsi* (Kbg.), Malmgren, p. 365, *finmarchica* Mlgn. (perhaps variety of *A. sarsi*), p. 368, *mollis* (Sars), p. 369; McINTOSH, *Ray Soc.*

*Aphrodita aculeata* (L.), p. 247; McINTOSH, t. c.

*Arabella maculosa*, n. sp., p. 651; VERRILL, *Tr. Connect. Ac.* x.

*Aracoda tenuis*, n. sp., p. 216; EHLERS, *Nachr. Ges. Göttingen* 1900.

*Arenicolidae*; GAMBLE & ASHWORTH, *Quart. J. Micr. Sci.* xliii, p. 419.

*Aricia cochleata*, *ohlini*, p. 217, n. spp.; EHLERS, *Nachr. Ges. Göttingen* 1900: *A. setosa*, n. sp., p. 651; VERRILL, *Tr. Connect. Ac.* x.

- Asterope candida* (D. Ch.), p. 7; APSTEIN, Plankton Exped. ii.  
*Autolytus simplex*, n. sp., p. 213; EHLERS, Nachr. Ges. Göttingen 1900.  
*A. (Proceræa) simplex*, n. sp., p. 630; VERRILL, Tr. Connect. Ac. x.  
*Axiothella*, sub-gen., n. n., type *A. catenata* (Mgn.), p. 657, *somersi*, n. sp., p. 658; VERRILL, t. c.  
*Branchiosyllis lamellifera*, n. sp., p. 624; VERRILL, t. c.  
†*Byronia*, n. g., p. 41, *annulata*, p. 42, n. sp.; MATTHEW, Tr. R. Soc. Canada (2) v, Sect. 4.  
*Callizona henseni*, n. sp., p. 20; APSTEIN, Plankton Exped. ii.  
*Callizonella lepidota* (Krohn.), p. 12; APSTEIN, t. c.  
*Ceratonereis mirabilis* Kbg., pl. xi, fig. 42, *fasciata* Gr. (Ehrb.), fig. 43, *obockensis*, n. sp., figg. 44 & 45; GRAVIER, Arch. Mus. Paris (4) ii.  
*Chrysopetalum elegans* Bush, n. sp., p. 668; VERRILL, Tr. Connect. Ac. x.  
*Cirratus* (*Audouinia*) *capillaris*, n. sp., p. 653, *websteri*, n. n., p. 654; VERRILL, t. c.  
*Clymenopsis*, n. g., type *C. singulata* (Ehl.), p. 654; VERRILL, t. c.  
*Clymenura*, n. g., type *C. cirrata* (Ehl.), p. 654; VERRILL, t. c.  
*Corynocephalus tenuis*, n. sp., p. 14; APSTEIN, Plankton Exped. ii.  
*Dasychone maculata*, n. sp., p. 125; FISCHLI, Abh. Senckenb. Ges. xiv.  
*Desmosyllis*, n. g., p. 635, type *D. tenera* V.; VERRILL, Tr. Connect. Ac. x.  
*D. longisetosa*, n. sp., p. 626; VERRILL, t. c.  
*Enipo kinbergi* Mlgn., p. 395; MCINTOSH, Ray Soc.  
*Eteone rubella*, p. 211, *crassifolia*, p. 211, n. spp.; EHLERS, Nachr. Ges. Göttingen 1900.  
*Euclymene*, n. n., type *Clymene cerstedii* Clap., p. 654, *coronata*, n. sp., p. 655; VERRILL, Tr. Connect. Ac. x.  
*Eugrymæa*, sub-gen. n., p. 662, *polybranchia*, n. sp., p. 662; VERRILL, t. c.  
*Eulalia megalops*, n. sp., p. 601; VERRILL, t. c.  
*E. strigata*, n. sp., p. 211; EHLERS, Nachr. Ges. Göttingen 1900.  
*E. manca*, p. 209, n. sp.; GRAVIER, Arch. Mus. Paris (4) ii.  
*Eunice auriculata*, n. sp., p. 342, Porto Rico; TREADWELL, Science (n. s.) xii.  
*E. margaritacea*, n. sp., p. 104; FISCHLI, Abh. Senckenb. Ges. xiv.  
*E. aphroditois* Pall., var. *djiboutiensis*, n. var., p. 224, *marenzelleri*, n. sp., p. 229, *perrieri*, n. sp., p. 232, *fauveli*, n. sp., p. 236, *perimensis*, n. sp., p. 239, *indica* Kbg., p. 242, *mutabilis*, n. sp., p. 245, *ehlersi*, n. sp., p. 248, *collaris* Ehrb., p. 251, *flaccida* Gr., p. 255, *grubei*, n. sp., p. 258, *siciliensis* Gr., p. 261, *valida*, n. sp., p. 264; GRAVIER, Arch. Mus. Paris (4) ii.  
*Eunoa nodosa* (Sars), p. 291, *tritonii* McInt., p. 296; MCINTOSH, Ray Soc.  
*Euphrosyne foliosa* Audouin & Edwards, p. 234, *armadillo* Sars, p. 238, *robertsoni*, n. sp., p. 240; MCINTOSH, t. c.  
*E. notialis*, p. 207, *armadilloides*, p. 208, *setosissima*, p. 208, n. spp., *cirratus* var. *magellanica*, n. var., p. 208; EHLERS, Nachr. Ges. Göttingen 1900.  
*Eupolymnia*, n. n. = *Polymnia* Mgn., p. 660; VERRILL, Tr. Connect. Ac. x.  
*Eurythoe borealis* Sars, p. 224; MCINTOSH, Ray Soc.  
*Eusthenelais hibernica* McInt., p. 425; MCINTOSH, t. c.  
*Eusyllis* (*Synsyllis*) *viridula*, p. 622, *longigularis*, p. 623, n. spp.; VERRILL, Tr. Connect. Ac. x.  
*Euthalenessa*, n. n. for *Thalenessa* Baird. char. em. McInt., p. 114; DARBOUX, Bull. Sci. France Belgique xxxiii.  
*Evarne impar* (Johnston), p. 353, *johnstoni* McInt., p. 358, *kubrechtii*, n. sp., p. 360, *atlantica* McInt., p. 363; MCINTOSH, Ray Soc.  
*Fauvelia*, n. g., *martinensis*, n. sp., p. 371 (Syllidea); GRAVIER, Bull. Mus. Paris 1900.  
*Gastrocercatella*, n. g., type *Polynos tamiata*, p. 106; DARBOUX, Bull. Sci. France Belgique xxxiii.

- Gattyana*, n. g. for *Nychia* Mlgrn. which is preoccupied, type *G. cirrosa* (Pall.), p. 285; McINTOSH, Ray Soc.
- Genetyllis brevis*, n. sp., p. 210; EHLERS, Nachr. Ges. Göttingen 1900.
- Glycera fusiformis*, n. sp., p. 113; FISCHLI, Abh. Senckenb. Ges. xxv.
- G. gigantea* Qfg., p. 6; NEWBIGIN, Commun. Millport Stat. i.
- Goniada eximia*, n. sp., p. 216; EHLERS, Nachr. Ges. Göttingen 1900.
- Greefia celox* (Greeff), p. 12; ARSTEIN, Plankton Exped. ii.
- Grubeosyllis*, n. n. (= *Grubea* Qfg.), p. 633, *maculata*, p. 634, *fusca*, p. 634, *nitidula*, p. 628, *rugulosa*, p. 629, n. spp.; VERRILL, Tr. Connect. Ac. x.
- Halosydna gelatinosa* Sars, p. 384; McINTOSH, Ray Soc.
- Haplosyllis cephalata*, p. 613, *palpata*, p. 615, n. spp.; VERRILL, Tr. Connect. Ac. x: *H. djiboutiensis*, n. sp., p. 147; GRAVIER, Arch. Mus. Paris (4) ii.
- Harmothoe* Kinberg char. em., p. 313, *imbricata* (L.), p. 314, *spinifera* (Ehlers), p. 327, *zelandica*, McInt., p. 330, *lyngmani* (Mlgrn.), p. 332, *antlopiis* McInt., p. 334, *haliæti* McInt., p. 336, *fraser-thomsoni* McInt., p. 337, *murphysæ* McInt. p. 339, *lunulata* (Delle Chiaje), p. 342, *setosissima* (Savigny), p. 345, *areolata* (Grube), p. 349; McINTOSH, Ray Soc.
- Hanellia*, n. g., type *Thalenessa microceras*, p. 116; DARBOUX, Bull. Sci. France Belgique xxxiii.
- Hemisyllis*, n. g., *dispar*, n. sp., p. 619; VERRILL, Tr. Connect. Ac. x.
- Herdmanella*, n. g., type *Polynoe* (?) *ascidioides* McInt., p. 107; DARBOUX, Bull. Sci. France Belgique xxxiii.
- Hermadion ambiguum*, n. sp., p. 209; EHLERS, Nachr. Ges. Göttingen 1900.
- H. pellucidum* (Ehlers) Marenzeller, now called *Scalisetorus communis* (D. Ch.), p. 372; McINTOSH, Ray Soc.
- H. sabatieri*, p. 120, n. sp.; DARBOUX, Bull. Sci. France Belgique xxxiii.
- Hermione hystrix* Savigny, p. 264; McINTOSH, Ray Soc.
- Hesione ehlersi*, n. sp., p. 175; GRAVIER, Arch. Mus. Paris (4) ii.
- Heteromarpysa*, n. g., *tenuis*, n. sp., p. 637; VERRILL, Tr. Connect. Ac. x.
- Hydroides multispinosa*, var. *ternatensis*, nov. var., p. 130; FISCHLI, Abh. Senckenb. Ges. xxv.
- †*Hyalithes carinatus*, p. 42, *hathewayi*, p. 73, n. spp.; MATTHEW, Tr. R. Soc. Canada (2) v, Sect. 4.
- †*Ichneum*, n. g., *wattsi*, n. sp., p. 284; SOLLAS, Quart. J. Geol. Surv. 56.
- Intoshella*, n. n. for *Langerhansia* McInt., preoccupied, p. 108; DARBOUX, Bull. Sci. France Belgique xxxiii.
- Jasmineira elegans* St. Jos., Clyde Area, p. 3; NEWBIGIN, Commun. Millport Stat. i.
- Kermadecella*, n. g., type *Polynoe magnipalpa* McInt., p. 108; DARBOUX, Bull. Sci. France Belgique xxxiii.
- Lanilla glabra* Malmgren, called *Harmothoe setosissima* (Sav.), p. 345; McINTOSH, Ray Soc.
- Læmatonice flicornis* Kinberg, p. 258, *producta*, var. *britannica*, n. var., p. 262; McINTOSH, t. c.
- Lagisca floccosa* (Savigny), p. 298, *elisabethæ*, n. sp., p. 303, *jeffreysii*, n. sp., p. 305, *extenuata* (Grube), p. 307; McINTOSH, t. c.
- Lanice triloba*, n. sp., p. 122; FISCHLI, Abh. Senckenb. Ges. xxv.
- Leanira giardi*, n. sp., p. 123; DARBOUX, Bull. Sci. France Belgique xxxiii.
- L. hystrix* Ehl., p. 434; McINTOSH, Ray Soc.
- Leocrates giardi*, n. sp., p. 180; GRAVIER, Arch. Mus. Paris (4) ii.
- Leodice elegans*, p. 640, *stigmatura*, p. 641, *concinna*, p. 643, *tenuicirrata*, p. 643, *unifrons*, p. 644, *margaritacea*, p. 644, n. spp.; VERRILL, Tr. Connect. Ac. x.
- Leonnates jousseaumi*, n. sp., pl. xi, fig. 34-37; GRAVIER, Arch. Mus. Paris (4) ii.

- Lepidasthenia argus*, n. sp., p. 250, commensal in the tubes of *Amphitrite edwardsi* at Salcombe, length up to  $8\frac{1}{2}$  inches; HODGSON, J. Mar. Biol. Ass. (n. s.) vi.
- Lepidonotus* Leach char. em., p. 273, *squamatus* (L.), p. 274, *clava* (Montagu), p. 280; MCINTOSH, Ray Soc.
- L. giganteus* Kirk, full description, p. 974; THOMSON, P. Zool. Soc. London 1900.
- Loimia bermudensis*, n. sp., p. 664; VERRILL, Tr. Connect. Ac. x.
- Lumbriclymene* Sars 1871, distinct from *Praxillura* Ver. 1879, p. 659; VERRILL, t. c.
- Lumbrineris nasuta*, n. sp., p. 651; VERRILL, t. c.
- Lumbriconereis ozychata*, n. sp., p. 275; GRAVIER, Arch. Mus. Paris (4) ii.
- Lyndice bilobata*, n. sp., p. 645; VERRILL, Tr. Connect. Ac. x.
- L. collaris* Gr., p. 272; GRAVIER, Arch. Mus. Paris (4) ii.
- L. kukenthalii*, n. sp., p. 106; FISCHLI, Abh. Senckenb. Ges. xxv.
- Macdoris iricolor* (Montagu), p. 98; WILLEY, J. Mar. Biol. Ass. (n. s.) vi.
- Maldanopsis*, n. g., type *M. elongata* V. 1873, p. 659; VERRILL, Tr. Connect. Ac. x.
- Malmgrenia castanea* McInt., p. 379, *andreapolis* McInt., p. 382; MCINTOSH, Ray Soc.
- Marphysa mosambica* Peters, p. 267, *adenensis*, n. sp., p. 270; GRAVIER, Arch. Mus. Paris (4) ii.
- M. regulis*, n. sp., p. 636; VERRILL, Tr. Connect. Ac. x.
- Mayeria*, n. g., type *Mayeria gregarica* (Mayer), p. 650; VERRILL, Tr. Connect. Ac. x, but see EHLERS, Nachr. Ges. Göttingen p. 397, 1900.
- Melinna adriatica* von Marenz at Salcombe, p. 197; ALLEN, J. Mar. Biol. Ass. (n. s.) vi.
- Nematonereis hebes*, n. sp., p. 647; VERRILL, Tr. Connect. Ac. x.
- Nephtys hystrix*, n. sp., p. 259, *grubei*, n. sp., p. 260, *inermis* Ehlers, p. 262, *canadensis*, n. sp., p. 264, *lawrencii*, n. sp., p. 265; MCINTOSH, Ann. Nat. Hist. (7) v.
- Nereis pelagica* L., var. *lunulata*, Magellan Straits; EHLERS, Nachr. Ges. Göttingen 1900.
- N. coutieri*, n. sp., pl. xi, figg. 38-41; GRAVIER, Arch. Mus. Paris (4) ii.
- Nereis* (*Ceratonereis* Knbg.) *ternatensis*, n. sp., p. 112; FISCHLI, Abh. Senckenb. Ges. xxv.
- Nicolea modesta*, n. sp., p. 663; VERRILL, Tr. Connect. Ac. x.
- Ninoe leptognatha*, n. sp., p. 215; EHLERS, Nachr. Ges. Göttingen 1900.
- Nychia* Malmgren, gives way to *Gattyana*, n. g., p. 285; MCINTOSH, Ray Soc.
- Odontosyllis enopla*, p. 627, *brachydonta*, p. 628, n. spp.; VERRILL, Tr. Connect. Ac. x.
- Oenone pacifica*, n. sp., p. 108; FISCHLI, Abh. Senckenb. Ges. xxv.
- Opisthosyllis nuchalis*, n. sp., p. 620, var. ? *gularis*, p. 622; VERRILL, Tr. Connect. Ac. x.
- +*Orthotheca corrugata*, n. sp., p. 42; MATTHEW, Tr. R. Soc. Canada (2) v, Sect. 4.
- Panthalis erstedii* Kbg., p. 400; MCINTOSH, Ray Soc.
- Paramarphysa obtusa*, n. sp., p. 646; VERRILL, Tr. Connect. Ac. x.
- Paramphionome pulchella* Sars, p. 222, fig. 15; MCINTOSH, Ray Soc.
- Parautolytus*, n. g., *fasciatus*, n. sp., p. 213; EHLERS, Nachr. Ges. Göttingen 1900.
- Pareulepis*, n. g., type *Eulepis wyvillei* McInt., p. 116; DARBOUX, Bull. Sci. France Belgique xxxiii.
- Parmenis lungmani* Malmgren = *Her-*  
p. 332; MCINTOSH, Ray Soc.
- Perinereis heterodonta*, n. sp.

- Ehl., fig. 48, *nigropunctata* Horst, fig. 49, Text not yet published  
GRAVIER, Arch. Mus. Paris (4) ii.
- Pholoe minuta* (Fabr.), p. 437; MCINTOSH, Ray Soc.
- Phyllantinoides mollis* McInt., p. 371; MCINTOSH, t. c.
- Phyllodoce bermuda*, n. sp., p. 600; VERRILL, Tr. Connect. Ac. x.
- P. lamelligera* Jhnst. and *laminosa* Sav., p. 5; NEWBIGIN, Commu Millport Stat. i.
- P. sancti-josephi*, p. 196, *erythraensis*, p. 202, *gravidata*, p. 205, *malmgreni*, p. 207, n. spp.; GRAVIER, Arch. Mus. Paris (4) ii.
- Placostegus* sp.?, p. 222, Magellan Straits, empty tubes; EHLERS, Nachr. Ges. Göttingen 1900.
- Platynereis insolita*, n. sp., pl. xii, fig. 53, *pallida*, n. sp., fig. 54, *pulchella*, n. sp., figg. 55 & 56; GRAVIER, Arch. Mus. Paris (4) ii.
- Polycirrus* sp.?, p. 221, Magellan Straits; EHLERS, Nachr. Ges. Göttingen 1900.
- P. corallicola*, p. 665, *pennulifera*, p. 665, *luminosus*, p. 666, n. sp.; VERRILL, Tr. Connect. Ac. x.
- Polymnia* sp.?, p. 220, Magellan Straits; EHLERS, Nachr. Ges. Göttingen 1900.
- Polymniella*, subgen. n., p. 660, *aurantiaca*, n. sp., p. 661; VERRILL, Tr. Connect. Ac. x.
- Polynoe cornuta*, n. sp., p. 99; FISCHLI, Abh. Senckenb. Ges. xxv.
- P. scolopendrina* Sav., p. 389; MCINTOSH, Ray Soc.
- Praxillura* Ver., type *P. ornata* V., p. 660; VERRILL, Tr. Connect. Ac. x.
- Procerastea perrieri*, n. sp., p. 35, from La Hougue; GRAVIER, Ann. S. nat. sér. 8, xi, also in Bull. Mus. Paris p. 288.
- Protothlepus*, n. g., p. 662, *tenuis*, n. sp., p. 663; VERRILL, Tr. Connect. Ac. x.
- Protulopsis nigra-nucha*, n. sp., p. 128; FISCHLI, Abh. Senckenb. Ges. xxv.
- Pseudonereis anomala*, n. sp., pl. xii, figg. 50-52; GRAVIER, Arch. Mus. Paris (4) ii.
- Rhynchonerella fulgens* Greeff, p. 15; APSTEIN, Plankton Exped. ii.
- Sabella* sp.?, p. 222, Magellan Straits; EHLERS, Nachr. Ges. Göttingen 1900.
- Sabella curta* Montagu = *Melinna adriatica* v. Marenz, p. 198; ALLÉ, J. Mar. Biol. Ass. (n. s.) vi.
- Scaliozetosus communis* (Delle Chiaje), p. 372, *assimilis* (McInt.), p. 37; MCINTOSH, Ray Soc.
- †*Serpula patagonica*, n. sp., p. 369; ÖRTMANN, Amer. J. Sci. (4) x.
- Sigalion mathildæ* Aud. & Edwards, p. 427, *buskii* McInt., p. 43; MCINTOSH, Ray Soc.
- S. squamatum* D. Ch., *mathildæ* Aud. et Edw., p. 134; DARBOUX, Bu. Sci. France Belgique xxxiii.
- Siphonostoma affinis* Sars, *diptochaitos* Otto, and *claparedii* (de St. Joes.) p. 190; NEWBIGIN, Ann. Nat. Hist. (7) v.
- Spinther oniscoides* Johnston, p. 230, *miniaceus* Grube, p. 232; MCINTOSH, Ray Soc.
- Spirorbis nordenskjöldi*, n. sp., p. 222; EHLERS, Nachr. Ges. Göttingen 1900.
- Staurocephalus gregaricus*, n. sp., p. 1; MAYER, Bull. Mus. Harvard xxxv.
- EHLERS, Nachr. Ges. Göttingen 1900, p. 397.
- Stauronereis*, n. n. = *Anisocerus* and *Staurocephalus* Gr. (preoc.), p. 64.
- melanops*, p. 648, *erythrops*, p. 649, *polydonta*, p. 650, n. sp.; VERRILL, Tr. Connect. Ac. x.
- S. maderia*, n. n. for *S. pallidus* Langerhans 1879, p. 650; VERRILL, t. c.
- Sthenelais boa* (Johnst.), p. 408, *zelandica* McInt., p. 414, *atlantica* McInt., p. 415, *limicola* Ehl., p. 417, *jeffreysii* McInt., p. 421; MCINTOSH, Ray Soc.

- S. setosa* Bush, n. sp., p. 666; VERRILL, Tr. Connect. Ac. x.  
*Stratioidrilus*, n. g., *tasmanicus*, n. sp., p. 300, from the branchial chambers of *Astacopsis tasmanicus*; HASWELL, Quart. J. Micr. Sci. xliii.  
*Streblosoma* M. Sars 1871 (type *S. cochleatum* Sars) = *Grymæa* Mgn. (preoc.), p. 661; VERRILL, Tr. Connect. Ac. x.  
*Syllis gracilis* Grube, p. 150, *longissima*, n. sp., p. 154; GRAVIER, Arch. Mus. Paris (4) ii.  
*S. (Huplosyllis) djiboutiensis*, n. sp., p. 147; GRAVIER, t. c.  
*S. sclerolæma*, n. sp., p. 212; EHLERS, Nachr. Ges. Göttingen 1900.  
*S. quadrifasciata*, n. sp., p. 117; FISCHLI, Abh. Senckenb. Ges. xxv.  
*S. (Ehlersia) exigua*, p. 611, *nitida*, p. 612, n. spp.; VERRILL, Tr. Connect. Ac. x.  
*S. (Typosyllis) corallicola*, p. 603, var. *lineolata*, p. 604, *grandigularis*, p. 604, *catenula*, p. 604, *jugularis*, p. 606, *diplomorpha*, p. 606, *annularis*, p. 608, *cincinnata*, p. 609, n. spp.; VERRILL, t. c.  
*Synsyllis*, subgen. n., type *S. viridula* V., p. 635; VERRILL, t. c.  
† *Terebella magna*, n. sp., p. 370; ORTMANN, Amer. J. Sci. (4) x.  
*Thalenessa gracilis*, n. sp., p. 101; FISCHLI, Abh. Senckenb. Ges. xxv.  
*Tomopteris nationalis*, p. 41, *septentrionalis*, p. 41, *planktonis*, p. 42, n. spp.; APSTEIN, Plankton Exped. ii.  
*T. onisciformis* Esch., p. 686; BROWNE, P. Irish Ac. (3) v.  
*Trophonia glauca* Mgn., p. 7; NEWBIGIN, Commun. Millport Stat. i.  
*Trypanosyllis attenuata*, p. 615, *fertilis*, p. 616, *tenella*, p. 617, n. spp.; VERRILL, Tr. Connect. Ac. x.  
*T. richardi*, n. sp., p. 168; GRAVIER, Arch. Mus. Paris (4) ii.  
*Typosyllis variegata* Grube, p. 158, *exilis*, n. sp., p. 160, *bouvieri*, n. sp., p. 163, *compacta*, n. sp., p. 165; GRAVIER, Arch. Mus. Paris (4) ii.  
† *Urotheca*, n. g., *flagellum*, p. 40, *parva*, p. 41, n. spp.; MATTHEW, Tr. R. Soc. Canada (2) v, Sect. 4.  
*Vanadis formosa* Clap., pp. 1 and 8, and six other species of *V.* recorded; APSTEIN, Plankton Exped. ii.  
*Vermilia nigropileata*, n. sp., p. 222; EHLERS, Nachr. Ges. Göttingen 1900.

## OLIGOCHÆTA.

### GENERAL BIOLOGY.

- Agronomical importance of earthworms; HENRY, Bull. Soc. Nancy, seances (3) i, pp. 23-34.  
 Amœbocytes. Oligochæta, p. 118, Cardiac body, pp. 113 & 138, Chloragogen cells, p. 148, Lymphocytes, p. 131; BOCK, Rev. Suisse Zool. viii.  
 Anatomy, comparative of European Lumbricidæ, p. 299; RIBAUCCOURT, C.R. Soc. Biol. lii.  
 Circulatory System. *Mesoporo-drilus asymmetricus*, p. 469; SMITH, Bull. Illinois Lab. v.  
 Encystment. *Pachydrilus catanensis* Drago; DRAGO, Zool. Anz. xxiii, p. 18.  
 Heteroblasty. Pharynx of *Allolobophora* regenerated from endoderm, p. 105; KROEBER, Biol. Bull. ii.  
 Heteromorphosis in *Allolobophora fatida*, p. 198; MORGAN, Biol. Lectures (1899).  
 Histology. Immobile cilia in the ventriculus of *Nais*; VIGNON, Arch. zool. exp. Notes (3) viii.  
 Maturation and Fertilisation. *Tubifex rivulorum* Lam., p. 13; GATTELLI, Cellule xvii.

Nephridia. Development of the end-vesicle by invagination of h dermis in *Lumbricus*, *Allolobophora*, and *Dendrobena*; VEJDOW Zeitschr. wiss. Zool. lxvii.

Nephridial System. *Mesoporo-drilus asymmetricus*, p. 468; SMITH, Illinois Lab. v.

Nervous System by Golgi's Method of *Lumbriculus* and *Lumbr* p. 65; HAVET, Cellule xvii.

Nomenclature. HORST, Zool. Anz. xxiii, p. 6; MICHAELSEN, t. c. p. Parasitology. Life-history of the Gregarines of *Lumbricidae*, p.

CUÉNOT, Arch. Biol. xvii.

Photomicrography of egg of *Allolobophora fatida*; FOOT & STROE J. Morphol. xvi, p. 601.

Regeneration. *Lumbriculus variegatus* Gr.; WAGNER, Zool. Zs Anat. xiii, p. 603.

Reproductive System. Table of comparison between *Eclipid frigidus*, *Mesoporo-drilus asymmetricus*, and *Premnodrilus palustris*, p. SMITH, Bull. Illinois Lab. v: *Digaster sylvaticus* Fletch., p. 53; BRENN. P. Linn. Soc. N. S. Wales xxiv.

Sensory System of Oligochaeta, p. 92, Taf. xxi; RETZIUS, Biol. Untere (n. F.) ix.

Spermathecae. *Rhynchelmis*; MRÁZEK, SB. Bohmisch. Ges. 1 pp. 1-5.

Spermatogenesis. *Limnodrilus gotoi* and *Vermiculus limosus*, p. HATAI, Biol. Bull. i.

Spermiducal glands of Australian earthworms, p. 109; SWEET, J. I Soc. xxviii.

Teratology. *Nais* with bifurcated prostomium, p. 311; CHILD, J Anat. xvii.

Variation. *Lumbricus agricola* supernumerary testes and ovaries, abnormal disposition of genital ducts, p. 123; PEARL, Anat. Anz. 1 in position of ♂ pores in *Allurus tetraedrus* (Lav.), p. 19; MICHAEL Abh. Ver. Hamburg xvi.

#### DISTRIBUTION.

Monograph. Oligochaeta; MICHAELSEN, Das Tierreich. Lief. x. Switzerland. BRETSCHER, Biol. Centrbl. xx; Rev. Suisse Zool. p. 1 & p. 435: Oligochaeta of the mountain lakes; ZSCHOKKE, J Schweiz. Ges. p. 109.

North America. Lumbricidae and the mutual relationships of endemic species; MICHAELSEN, Abh. Ver. Hamburg xvi.

Florida. *Premnodrilus palustris* found in a decayed log in a me SMITH, Bull. Illinois Lab. v, p. 459.

Illinois. Oligochaeta; SMITH, Bull. Illinois Lab. v, p. 441.

Pacific Coast. *Oligochaeta*, p. 85; EISEN, P. Calif. Ac. (3) ii.

America, South. Terricoline faunule; MICHAELSEN, H. Mag. Samu 3, and Arch. Naturg. lxvi, p. 236.

Paraguay. *Oligochaeta*, p. 1; COGNETTI, Boll. Mus. Torino xv, No. 1: Ethiopian Province. Hoch-Sennaar, Long. 33° 30' E., Lat. 11° 45' the most northerly limit of *Eminoscolex* and of the Central Afri Terricoline sub-family *Eudrilini*; MICHAELSEN, 2 Beiheft, Hamburg 1 xvii.

Western Tropical Africa. Earthworm, p. 167; BEDDARD, P. Zool. London 1900.

Eurasian Lumbricidae; MICHAELSEN, Annuaire Mus. St. Peters p. 213.

India. Earthworm from Calcutta, p. 998; BEDDARD, P. Zool. London 1900.

Malay Peninsula. Earthworms, p. 891; BEDDARD, t. c.  
 Sandwich Islands. Earthworms; BEDDARD, Fauna Hawaiensis ii,  
 Pt. iv, p. 413.

## SYSTEMATIC.

- Æolosoma*; JANDA, SB. Bohmisch. Ges. 1900, pp. 1-21.  
*Æ. beddardi*, p. 14, n. sp.; MICHAELSEN, Das Tierreich. Lief. x.  
*Allolobophora persiana*, p. 216, *schneideri*, San Remo, *fedtschenkoi*, p. 219,  
 Turkestan, *taschkentensis*, Turkestan, *adaiensis*, p. 221, Caucasus,  
*crassa*, Transcaucasus, n. spp.; MICHAELSEN, Annuaire Mus. St.  
 Petersb. v.  
*A. pallida*, p. 41, *brunescens*, p. 42, *rubra*, p. 454, *benhami*, p. 455, *asco-*  
*nensis*, p. 457, n. spp.; BRETSCHER, Rev. Suisse Zool. viii.  
*Allurus tetradrus* (Sav.), N. America and Europe. Scheme of its different  
 formæ, viz. *typica*, *hercynia*, *neapolitana*, *ninnii*, *tetragonura*, *pupa*,  
 pp. 16-19; MICHAELSEN, Abh. Ver. Hamburg xvi.  
*Amyntas* gives way to *Pheretima* Klug. q. v.; MICHAELSEN, Das Tierreich.  
 Lief. x, p. 234.  
*Amyntas*, a Revision of the Genus including descriptions of 103 species,  
 p. 609; BEDDARD, P. Zool. Soc. London 1900.  
*Amyntas asiaticus*, n. sp., p. 224, Tjan-Dzin; MICHAELSEN, Annuaire Mus.  
 St. Petersb. v.  
*A. malayanus*, p. 893, *virgo*, p. 895, *pericheta*, p. 896, *polytheca*, p. 897,  
*arincanus*, p. 898, *kelantanensis*, p. 902, *pulauensis*, p. 904, *minutus*,  
 p. 906, *evansi*, p. 907, *biporus*, p. 908, n. spp.; BEDDARD, P. Zool.  
 Soc. London 1900.  
*A. alexandri*, n. sp., p. 999; BEDDARD, t. c.  
*A. peregrinus* Fletcher, p. 414, *heterocheta* Mich., p. 416, *hesperidum* Bedd.,  
 p. 417, *hawayanus* Rosa, p. 420, *schmardæ* Horst, p. 426; BEDDARD,  
 Fauna Hawaiensis ii, Pt. iv.  
*Andiodrilus*, n. g., p. 250, *pachoenis*, p. 251, *affinis*, p. 253, *bogotaensis*,  
 p. 254, *major*, p. 257, n. spp.; MICHAELSEN, Arch. Naturg. lvi.  
*Anteus columbianus*, n. sp., p. 53; MICHAELSEN, Zool. Anz. xxiii.  
*A. purnio*, p. 238, *monticola*, p. 240, *hamifer*, p. 242, *savannicola*, p. 244,  
*sibateensis*, p. 247, *aberratus*, p. 263, *octocystis*, p. 265, n. spp.;  
 MICHAELSEN, Arch. Naturg. lvi.  
*Argilophilus hyalinus*, n. sp., p. 163, *marmoratus collinus*, n. subsp., p. 163;  
 EISEN, P. Calif. Ac. (3) ii.  
*Benhamia bolavi* Mich., var. *pacifica*, n. var., p. 209, *papillata* Eisen, var.  
*hawaiiensis*, n. var., p. 212, *viridis*, n. sp., p. 214, *jamaica*, n. sp.,  
 p. 218, *guatemalæ*, n. sp., p. 219; EISEN, t. c.  
*B. budgetti*, n. sp., p. 659; BEDDARD, P. Zool. Soc. London 1900.  
*B. cæcifera* (Benham), p. 167; BEDDARD, t. c.  
*Bicheta*, n. g., *sanguinea*, n. sp., p. 444; BRETSCHER, Rev. Suisse Zool. viii.  
*Bimastus* Moore, subgen. of *Allolobophora*, p. 4; MICHAELSEN, Abh. Ver.  
 Hamburg xvi.  
*Brachydrilus benhami*, p. 462, n. sp.; MICHAELSEN, Das Tierreich. Lief. x.  
*Branchiodrilus*, n. n., type *Chaetobranchnus semperi* Bourne, p. 23; MICHAEL-  
 SEN, t. c.  
*Buchholzia parva*, n. sp., p. 24; BRETSCHER, Rev. Suisse Zool. viii.  
*Chilota beckmanni*, Chili, p. 9, *bertelseni*, Chili, p. 12, *fehlantdti*, Chili,  
 p. 14, *lossbergi*, Chili, p. 15, n. spp.; MICHAELSEN, H. Mag. Samm.  
 v-3.  
*Criodrilus burgeri*, n. sp., p. 236; MICHAELSEN, Arch. Naturg. lvi.  
*Dero* sp., p. 1, from Brazil; COGNETTI, Boll. Mus. Torino xv, No. 369.  
*D. borellii*, p. 522, n. sp.; MICHAELSEN, Das Tierreich. Lief. x.



- Dichogaster crawi*, p. 228, *ribaucourti*, p. 235, *townsendi*, p. 238, n. spp.; EISEN, P. Calif. Ac. (3) ii.
- Diplocardia*, synopsis and description of species, pp. 168-201; EISEN, t. c.
- Dravida*, n. g., type *D. barwelli* (Beddard), p. 114; MICHAELSEN, Das Tierreich. Lief. x.
- Eiseniella*, n. n., type *Allurus tetraëdrus* Mchlsn., p. 471; MICHAELSEN, t. c.
- Emboloccephalus multisetosus*, n. sp. (Tubificidæ), pp. 452-456; SMITH, Bull. Illinois Lab. v.
- E. plicatus* Rand, var. *pectinata*, n. var., p. 446; BRETSCHER, Rev. Suisse Zool. viii.
- Eminoscolex barnimi*, n. sp., Hoch-Sennaar, Africa; MICHAELSEN, 2 Beiheft Hamburg Anst. xvii.
- Enchytræus nigrina*, p. 26, *silvestris*, p. 27, n. spp.; BRETSCHER, Rev. Suisse Zool. viii.
- E. globulata*, n. sp., p. 450; BRETSCHER, t. c.
- Enicmodrilus*, n. subg. of *Onerodrilus*, p. 119, *santi xavieri*, n. sp., p. 120, *comondui*, n. sp., p. 121, *mexicanus*, n. sp., p. 124, var. *hawaiiensis*, n. var., *tuberculatus*, n. sp., p. 125; EISEN, P. Calif. Ac. (3) ii.
- Eophila* Rosa, subgen. of *Allolobophora*, p. 9; MICHAELSEN, Abh. Ver. Hamburg xvi.
- Eudrilus eugeniae* (Kinberg), pp. 135-146; EISEN, P. Calif. Ac. (3) ii.
- Eupolygaster*, n. n., type *Polygaster ceruleus* Horst, p. 112; MICHAELSEN, Das Tierreich. Lief. x.
- Eutyphæus*, n. n., type *Typhæus orientalis* Beddard, p. 322; MICHAELSEN, t. c.
- Fimoscolex*, n. g. (Geoscolecidæ), *ohausi*, n. sp., Brazil, p. 55; MICHAELSEN, Zool. Anz. xxiii.
- Fridericia beddardi*, p. 29, *humicola*, p. 30, *fruttensis*, p. 31, *alpinula*, p. 32, *auriculata*, p. 32, *minuta*, p. 33, *terrestria*, p. 34, n. spp., BRETSCHER, Rev. Suisse Zool. viii.
- F. polychata*, p. 450, *diachaeta* p. 451, *insubrica*, p. 452, *ditellaris*, p. 452, n. spp.; BRETSCHER, t. c.
- Geoscolex bergi*, n. sp., Argentina; ROSA, Comun. Mus. Buenos Aires i, p. 209.
- G. hondaensis*, n. sp., p. 261; MICHAELSEN, Arch. Naturg. lxvi.
- Glossoscolex paucisetis*, p. 445, n. sp.; MICHAELSEN, Das Tierreich. Lief. x.
- Hämonais*, n. g., *waldvogeli*, n. sp., p. 16; BRETSCHER, Rev. Suisse Zool. viii.
- Henlea stolli*, p. 35, *pratorum*, p. 36, *sulcata*, p. 36, n. spp.; BRETSCHER, t. c.
- Hesperoscolex*, n. n., type *Trichochaeta hesperidum* Beddard, p. 421; MICHAELSEN, Das Tierreich. Lief. x.
- Hoplochatella*, n. n., type *Perichaeta stuarti* Beddard, p. 321; MICHAELSEN, t. c.
- Kerria borellii*, n. sp., p. 6; COGNETTI, Boll. Mus. Torino xv, No. 369.
- K. rosæ* Beddard, Buenos Ayres, further account, p. 25; MICHAELSEN, H. Mag. Samm. v-3.
- Lumbricus baicalensis*, n. sp., Lake Baikal; MICHAELSEN, Annuaire Mus. St. Petersb. v, p. 214.
- Marionina lobata* Br. = *Pachydrius lobatus* Br., p. 23; BRETSCHER, Rev. Suisse Zool. viii.
- M. rivularis*, n. sp., p. 449; BRETSCHER, t. c.
- Megachætina*, n. n., type *Megachæta tenuis* Mchlsn., p. 393; MICHAELSEN, Das Tierreich. Lief. x.
- Mesenchytræus monochaetus*, n. sp., p. 21; BRETSCHER, Rev. Suisse Zool. viii.
- M. eiseni*, n. sp., p. 448; BRETSCHER, t. c.

- M. brasiliensis*, n. sp., p. 2; COGNETTI, Boll. Mus. Torino xv, No. 369.
- Microcolex carolinæ*, p. 154, *parrus*, p. 156, n. spp., var. *carolinianus*, n. var., p. 159, *horsti*, p. 160, n. sp.; EISEN, P. Calif. Ac. (3) ii.
- Naidium uniseta*, n. sp., p. 15; BRETSCHER, Rev. Suisse Zool. viii.
- Naillensia*, n. subgen. of *Diplocardia*, p. 197, *kabeli*, n. sp., p. 197; EISEN, P. Calif. Ac. (3) ii.
- Nematogenia*, n. subgen. of *Ocnerodrilus*, p. 127, *lacuum* Bedd., var. *panamaensis*, n. var., p. 127; EISEN, t. c.
- Notiodrilus philippii*, n. sp., Chili; MICHAELSEN, H. Mag. Samm. v-3, p. 6.
- N. whitmani*, p. 147, *cristalifer*, p. 149, n. spp.; EISEN, P. Calif. Ac. (3) ii.
- Ocnerodrilus*, key to subgenera and species, p. 110; EISEN, t. c.
- O. occidentalis* EISEN, *sinensis*, n. var., p. 115, *arizona*, n. var., p. 116; EISEN, t. c.
- O. michaelsoni*, n. sp., p. 3; COGNETTI, Boll. Mus. Torino xv, No. 369.
- Omahania*, n. subgen. of *Diplocardia*, p. 172, type *Diplocardia (Omahania) verrucosa* (Ude); EISEN, P. Calif. Ac. (3) ii.
- Parascolex*, n. n., type *Paradrilus rosæ* Mchln., p. 402; MICHAELSEN, Das Tierreich. Lief. x.
- Perichæta*, retention advocated; HORST, Zool. Anz. xxiii, p. 6, opposed by MICHAELSEN, t. c. p. 566.
- Pheretima* Kinberg, replaces the names *Amyntas* and *Perichæta*, p. 234; MICHAELSEN, Das Tierreich. Lief. x.
- Pontodrilus michaelsoni* EISEN, var. *hortensis*, n. var., p. 241; EISEN, P. Calif. Ac. (3) ii.
- Pontoscolex corethrurus* F. Müller, p. 10; COGNETTI, Boll. Mus. Torino xv, No. 369.
- P. corethrurus* (Fr. Müller) *mexicanus*, subsp. nov., pp. 87-109; EISEN, P. Calif. Ac. (3) ii.
- Premnodrilus*, n. g., *palustris*, n. sp., Florida, p. 459; SMITH, Bull. Illinois Lab. v.
- Preussiella*, n. n., type *Preussia siphonochæta* Mchln., p. 404; MICHAELSEN, Das Tierreich. Lief. x.
- Psammoryctes* Vejd. to be united with *Tubifex* Lam., p. 522; MICHAELSEN, t. c.
- Rhizodrilus*, n. g., *lacteus*, n. sp. (Tubificidæ), pp. 444-452; SMITH, Bull. Illinois Lab. v: according to MICHAELSEN this genus replaces *Vermiculus* Goodrich 1892; MICHAELSEN, Das Tierreich. Lief. x, p. 522.
- Schmardaella*, n. g., type *S. filiformis* (Beddard), Chili, Ecuador, p. 19; MICHAELSEN, t. c.
- Telmatodrilus mcgregori*, p. 244, n. sp.; EISEN, P. Calif. Ac. (3) ii.
- Trichochæta columbiana*, n. sp., p. 259; MICHAELSEN, Arch. Naturg. lxi.
- Trigaster tolteca*, n. sp., p. 203; EISEN, P. Calif. Ac. (3) ii.
- Tubifex heuscheri*, p. 11; *alpinus*, p. 13, n. spp.; BRETSCHER, Rev. Suisse Zool. viii.
- T. filiformis*, n. sp., p. 447; BRETSCHER, t. c.
- Yagansia delfini*, n. sp., Chili, p. 20; MICHAELSEN, H. Mag. Samm. v-3.
- Zapotecia*, n. g., *amecamecæ*, n. sp., p. 205; EISEN, P. Calif. Ac. (3) ii.

## HIRUDINEA.

### GENERAL BIOLOGY.

Anatomy. American freshwater leeches; CASTLE, Bull. Mus. Harvard xxxvi, No. 2.

Ciliated Organs of *Hamenteria officinalis*, p. 269; BOLATUB, Cellule r

## SYSTEMATIC.

- Amphiporus bürgeri*, n. sp., Chili, p. 178; ISLER, Zool. Anz. xxiii.
- Callinera* n. g. *bürgeri*, n. sp., West Coast of Sweden, p. 313; BERGENDAL, t. c. also Ofv. Ak. Forh. 57, p. 590.
- Carinesta*, n. g., p. 569, *orientalis*, n. sp., p. 570; PUNNETT, Zool. Results (Willey) Pt. v.
- Carinoma tremaphoros*, n. sp., Wood's Holl, Mass., p. 627; THOMPSON, Zool. Anz. xxiii.
- Cerebratulus natans*, p. 122, *brunneus*, p. 124, *robustus*, p. 126, *erythrus*, p. 127, *sordidus*, p. 129, *bedfordii*, p. 130, *insignis*, p. 132, *ulatiformius*, p. 134, n. spp.; PUNNETT, Quart. J. Micr. Sci. xlv.
- C. viridis*, Ceylon, *rigidus*, Nova Zembla, n. spp., p. 180; ISLER, Zool. Anz. xxiii.
- C. torresianus*, p. 826, *queenslandicus*, p. 827, *haddoni*, p. 829, n. spp.; PUNNETT, P. Zool. Soc. London 1900.
- Drepanophorus willeyanus*, p. 571, *lifuiensis*, p. 573, n. spp.; PUNNETT, Zool. Results (Willey) Pt. v.
- Eupolia melanogramma*, n. n. = *E. quinquelineata*, Bürger, p. 113, *pholidota*, n. sp., p. 117; PUNNETT, Quart. J. Micr. Sci. xlv.
- E. unistriata*, Ceylon, *sulcata*, Chili, *pallida*, n. spp., pp. 178 & 179; ISLER, Zool. Anz. xxiii.
- E. rugosa*, p. 574, *multiaporata*, p. 576, n. spp.; PUNNETT, Zool. Results (Willey) Pt. v.
- Gononemertes* n. g. *parasita*, n. sp., in *Phallusia* off West Coast of Sweden, p. 321; BERGENDAL, Zool. Anz. xxiii, also Ofv. Ak. Forh. 57, p. 596.
- Lineus albocinctus*, p. 598, *albonasus*, p. 598, n. spp.; VERRILL, Tr. Connect. Ac. x.
- L. australis*, n. sp., p. 577; PUNNETT, Zool. Results (Willey), Pt. v.
- L. viviparus*, Juan Fernandez, *patulus*, *ramosus*, Samoa, n. spp., pp. 179 & 180; ISLER, Zool. Anz. xxiii.
- Nemertopsis tenuis* Bürger and *flavida* (M'Int.), pp. 817-819; BEAUMONT, P. Irish Ac. (3) v.
- Stichostemma gracense* Böhm. in Bohemia; MRÁZEK, SB. Bohmisch Ges. 1900, No. iv.
- Tæniosoma curtum* (Hubrecht), p. 597; VERRILL, Tr. Connect. Ac. x.
- Tetrastemma*, account of 7 species occurring in Valencia Harbour, pp. 820-829; BEAUMONT, P. Irish Ac. (3) v.
- Zygeupolia* n. g. *litoralis*, n. sp., Wood's Holl, Mass., p. 151; THOMPSON, Zool. Anz. xxiii.

## TURBELLARIA.

## GENERAL BIOLOGY.

Anatomy. *Enterostoma mytili* v. Graff; combination of the genital orifice with the mouth, the *porus communis* opening at posterior end of body, pp. 256-263; SABUSSOW, Zool. Anz. xxiii: *Syndesmus echinorum* Franç., p. 282; SHIPLEY, Quart. J. Micr. Sci. xlv.

Excretory System. *Mesostoma cuenoti*, p. 6; DÖRLER, Zeitschr. wiss. Zool. lxviii.

Fissioniparity. Inhibition of normal fission in *Stenostoma*, p. 365; RITTER & CONGDON, P. Calif. Ac. (3) ii.

Heteromorphosis in *Planaria*, p. 201; MORGAN, Biol. Lectures (1899): *Planaria alpina*, etc.; RINA MONTI, Arch. ital. Biol. xxxiii: *Planaria maculata*, p. 198; LEMON, Biol. Bull. i.

Regeneration. *Bipalium*, p. 563; MORGAN, Arch. Entwicklmech. ix.

*Phagocata*, *Dendrocoelum*, and *Bipalium*, p. 58; MORGAN, op. cit. x: *Planarians*; LILLIE, Amer. Natural. xxxiv, p. 173: Physiology of regeneration in *Planaria maculata*, p. 193; LEMON, Biol. Bull. i: marine Planarians, *Thysanozoon brocchii*, etc.; MONTI, Mem. Ist. Lombardo xix, p. 1.

Morpholaxis. Regeneration by remoulding of an entire fragment into a new form, in contrast with regeneration by the addition of new tissue at the injured surface (neotaxis); this occurs in Planarians as well as in Cœlenterata and Protozoa, p. 199; MORGAN, Biol. Lectures (1899).

Mutual distribution of *Planaria alpina* and *P. gonocephala*. *P. alpina*, a relic of the Glacial Period, occurs in the extreme sources of rivers, p. 1v; HESSE, Jahresb. Ver. Württemb. 56.

Nervous System of *Planaria alpina* by Golgi's method, p. 336; MONTI, Monit. Zool. ital. xi.

Pigmentation. Land Planarians; v. LINDEN, Biol. Centrbl. xx, p. 556.

Oogenesis. *Thysanozoon brocchi*, origin of centrosome, p. 30; SCHOCKAERT, Anat. Anz. xviii.

Reproductive Organs of *Planaria maculata*, anatomy and development; CURTIS, Johns Hopkins Univ. Circ. xix, No. 146, p. 56: *Planaria simplissima*, n. sp.; CURTIS, Zool. Jahrb. Anat. xiii, p. 447: *Schultzia adriatica*, p. 17, *Collastoma monorchis*, p. 36; DÖRLER, Zeitschr. wiss. Zool. lxviii.

Temperature. Influence on reproduction of *Polycelis cornuta*, p. 19; VOIGT, SB. niederrhein Ges. 1900.

## DISTRIBUTION.

Irish Land Planarians. *Placocephalus kewensis* (Mos.), *Rhynchodemus terrestris* (Müll.) and *R. scharffi* v. Graff, p. 216; SCHARFF, Irish Natural. ix. Valencia Harbour. Turbellaria, p. 812; GAMBLE, P. Irish Ac. (3) v.

Brittany. *Collastoma monorchis* (*Rhabdocœla*) from intestine of *Phascolosoma vulgare* at Roscoff; DÖRLER, Zeitschr. wiss. Zool. lxviii.

Germany. Distribution of *Planaria alpina*; BRANDES, Zeitschr. Naturw. 73, p. 303; HESSE, Jahresb. Ver. Württemb. 56, pl. lv.

Switzerland. *Rhabdocœla*; FUHRMANN, Rev. Suisse Zool. vii, p. 717: Turbellarian Fauna of the mountain lakes; ZSCHOKKE, Denk. Schweiz. Ges. p. 77, 1900: of streams near Aarberg; VOLZ, Mt. Ges. Bern (1899) 1900, p. 66.

Adriatic Sea. Two species of *Genostoma* (*Rhabdocœla*) parasitic on *Nebalia* at Trieste, p. 21; DÖRLER, Zeitschr. wiss. Zool. lxviii.

Russia. *Plagiostoma lemani* Dupl. v. *quadrioculata* Zach. in the Volga, p. 634; ZYKOFF, Zool. Anz. xxiii.

Odessa. *Macrostomum hystrix* Sch. in Chadjibey Liman with saline concentration of 5-7° Beaumé, p. 495; BUTSCHINSKY, Zool. Anz. xxiii.

White Sea. *Urostoma fausseti* from mantle chamber of *Mytilus edulis*, p. 27 (*Rhabdocœla*); DÖRLER, Zeitschr. wiss. Zool. lxviii: *Enterostoma mytili* v. Graff from gills of *Mytilus edulis*, p. 256; SABUSSOW, Zool. Anz. xxiii.

Massachusetts. *Planaria simplissima*, p. 447; CURTIS, Zool. Jahrb. Anat. xiii.

Bermudas. Turbellaria; VERRILL, Tr. Connect. Ac. x, p. 595.

Brazil. Land-Planarians, p. 266; BELL, P. Zool. Soc. London 1900.

## SYSTEMATIC.

*Castrella* n. g. *agilis*, n. sp., Geneva, p. 729, type of the genus, *Vortex viridis* Silliman; FUHRMANN, Rev. Suisse Zool. vii.

*Collastoma* n. g. *monorchis*, n. sp., parasitic in the intestines

1900. [VOL. XXXVII.]

- vulgare* at Roscoff, pp. 33-39 (*Rhabdocæla*); DÖRLER, Zeitschr. Zool. lxviii.
- Didymorchis* n. g. *paranephropis*, n. sp., p. 424; HASWELL, P. Linn. N. S. Wales xxv.
- Enterostoma mytili* v. Graff from the gills of *Mytilus edulis* in the W. Sea, p. 256 (*Rhabdocæla*); SABUSSOW, Zool. Anz. xxiii.
- Genostoma* n. g. type *G. tergestinum* (Calandruccio), p. 21, *marsili* (Caland.), p. 25, both ectoparasitic on *Nebalia bipes* at Tr. (*Rhabdocæla*); DÖRLER, Zeitschr. wiss. Zool. lxviii.
- Leptoplana lactoalba*, n. sp., p. 595; VERRILL, Tr. Connect. Ac. x.
- Mesostoma cuenoti*, n. sp., Graz, p. 2 (*Rhabdocæla*); DÖRLER, Zeitschr. Zool. lxviii.
- M. yungi*, n. sp., Geneva, p. 722; FUHRMANN, Rev. Suisse Zool. vii.
- Planaria simplissima*, n. sp., Williamstown, Mass., from mountain stream, p. 447; CURTIS, Zool. Jahrb. Anat. xiii.
- Pseudoceros pardalis*, n. sp., p. 596; VERRILL, Tr. Connect. Ac. x.
- Rhynchodemus howesi*, p. 33, n. sp.; SCHARFF, J. Linn. Soc. xxviii.
- Schultzia adriatica*, n. sp., Trieste, p. 13 (*Rhabdocæla*); DÖRLER, Zeitschr. wiss. Zool. lxviii.
- Syndesmus echinorum* Franc. 10 specimens in gut and 1 in genital gland an *Echinus esculentus* L., p. 282 (*Vorticidæ*); SHIPLEY, Quart. J. Sci. xlv.
- Urastoma* n. g. *fausseti*, n. sp., from mantle chamber of *Mytilus edulis* the White Sea, pp. 27-33 (*Rhabdocæla*); DÖRLER, Zeitschr. Zool. lxviii.

## CESTODA.

### GENERAL BIOLOGY.

- Anatomy.** *Dicranotænia coronula* (Duj.) from *Anas boschas* c. Part 1. Description and structure of the Strobila, p. 355. Part 2. male and female generative organs, p. 362; ROSSETER, J. Quekett (2) vii: *Amabilia lamelligera* (Owen), *Schistotænia scolopendra* (Dessi macrorhyncha (Rud.), *Tænia polymorpha* (Rud. ex parte); COHN, Zeitschr. wiss. Zool. lxvii, p. 255: Detailed description of *Bothriocephalus imbricatus* (Dies.), pp. 45-53; LÜHE, Zeitschr. wiss. Zool. lxviii: *Fimbriaria fularis* Pallas; *Tænia polymorpha* Rud., *candelabraria* Goeze etc. c. WOLFFHÜGEL, Dissertation: *Drepanidotænia lanceolata* Bloch, p. WOLFFHÜGEL, Centrbl. Bakter. xxviii.
- Anatomy and Histology of two species of *Proteocephalus*;** BENED. J. Morphol. xvi, p. 337.
- Cestodes.** BRAUN, Bronn's Tierreich, Bd. iv.
- Cysts, structure of,** p. 134; MINGAZZINI, Arch. parasit. iii.
- Development.** *Bothriocephalidæ* with marginal genital pores, pp. 86-100; LÜHE, Zeitschr. wiss. Zool. lxviii: Rostellum of *Echinococcus*; GOSCHMIDT, Zool. Jahrb. Anat. xiii, p. 467: *Cercocystis* larvæ in Entomostr. DADAY, Zool. Jahrb. Syst. xiv: Embryonic development of two species *Anoplocephala* parasitic in the Horse, *A. plicata* Zeder and *A. mamillaris* Mehlis, p. 930; SAINT-REMY, C.R. Ac. Sci. cxxx, also Arch. parasit. p. 292.
- Diœcism.** *Diœcocestus paronai*, p. 50; FUHRMANN, Zool. Anz. xxiii.
- Diœcious Cestodes.** FUHRMANN, Centrbl. Bakter. xxviii, p. 363.
- Echinococcus*.** PICHLER, Centrbl. Bakter. xxvii, p. 468: Multilocular hydatid cysts, p. 167; RÉNON, C.R. Soc. Biol. lii.
- Multilocular *Echinococcus*,** p. 125, *E. alveolaris* in liver of an antelope, FIorentini e Garino, Atti Soc. Ital. xxxix.

Environment. Different species of *Cercocystis* larvæ of *Tæniidæ* may infest the same Entomostracan species and conversely one *Cercocystis* species can affect several Entomostracan hosts, p. 165; DADAY, Zool. Jahrb. Syst. xiv.

Excretory System. Enumeration of five types of commissural union between longitudinal stems in *Cystotæniidæ*, p. 282; COHN, Zeitschr. wiss. Zool. lxvii.

Hypodermic impregnation. *Acoelinae*, p. 49; FUHRMANN, Zool. Anz. xxiii.

Nervous System. *Moniezia expansa*; TOWER, Zool. Jahrb. Anat. xiii, p. 359.

Parasitic castration of *Atherina mocho* Cuv. due to *Ligula simplicissima* Rud.; PARONA e MAZZA, Atti Soc. Ligustica xi, p. 231.

Perforation of duodenum by a *Tænia* in human subject; STIEDA, p. 430, Centrbl. Bakter. xxviii.

Periodicity. Matutinal regurgitation of *Tænia proglottids*, p. 578; SABRAZÉS et KOEHLER, Arch. parasit. iii.

Polemic concerning *Dicranotænia* and *Drepanidotænia*; COHN, Centrbl. Bakter. xxvii, p. 325.

Reproductive System. *Bothriocephalidæ* with marginal genital pores, pp. 53-86; LÜHE, Zeitschr. wiss. Zool. lxviii.

Rostellum. *Drepanidotænia* from *Apteryx*, p. 83; BENHAM, Quart. J. Micr. Sci. xliii.

Statistics. Avian parasites; WOLFFHÜGEL, Dissertation.

Suctorial apparatus of *Bothriocephalidæ* and *Tetrarhynchidæ*, coalescence of two suckers to form one in both families, p. 13; LÜHE, Zool. Anz. xxiii.

Taxonomy. Principles of Cestode Classification; ARIOLA, Zool. Anz. xxiii, p. 417, LÜHE, t. c. p. 533.

Teratology. *Moniezia expansa*, pp. 215 & 261; CHILD, Biol. Bull. i: *Tænia solium* with an abnormal scolex, p. 66; MAGALHÃES, Centrbl. Bakter. xxvii: Trihedral *Tænia*, p. 492; NEVEU-LEMAIRE, Arch. parasit. iii: Moniliform specimens of *Tænia saginata*; PARONA, Atti Soc. Ligustica xi, p. 269.

Variation. Variability in the topographical relations of male and female genital pore in *Bothriocephalidæ*, p. 68, etc.; LÜHE, Zeitschr. wiss. Zool. lxviii.

## DISTRIBUTION.

Avian Cestodes. COHN, Zool. Anz. xxiii, p. 91; FUHRMANN, t. c. p. 48; BENHAM, Quart. J. Micr. Sci. xliii, p. 83; WOLFFHÜGEL, Dissertation: Cestodes of Corvidæ and of Accipitrinæ, p. 115; VOLZ, Arch. Naturg. lxvi.

Laridæ. *Tetrabothrium*, species; LINSTOW v., Centrbl. Bakter. xxvii.

Reptilia. *Bothriocephalidæ* of terrestrial reptiles, pp. 209 & 252; LÜHE, Centrbl. Bakter. xxvii: *Bothriocephalus imbricatus* (Dies.) the only *Bothriocephalid* with marginal genital pores known to occur in Reptilia, p. 45; LÜHE, Zeitschr. wiss. Zool. lxviii: three new Cestodes; RÄTZ (258).

Pisces. *Centrolophus pompilius* L. harbours 4 species of Cestoda *Amphicotyle typica* Dies. 1863, *Diplogonoporus wagneri* (Monticelli) 1890, *D. setti* Ariola 1895, *Bothriocotyle solinosomum* Ariola 1900; ARIOLA, Atti Soc. Ligustica xi, p. 220.

Sturiones. *Bothriocephalidæ*; LÜHE, Zool. Anz. xxiii, p. 8.

Hungary. *Cercocystis* larvæ in *Entomostraca*; DADAY, Zool. Jahrb. Syst. xiv.

New Britain. Some Entozoa, p. 531; SHIPLEY, Zool. Results (Willey) Pt. v.

New Guinea; RÄTZ (258).

## SYSTEMATIC.

- Acoelus crassus*, n. sp., p. 370; from *Tringa* sp., Brazil; *vaginatus* (F. = *armatus* Fuhrmann, p. 369; FUHRMANN, Centrbl. Bakter. xxviii.
- Adelobothrium* n. g. *etiobatidis*, n. sp., p. 545; SHIPLEY, Zool. Res (Willey) Pt. v.
- Anomotenia* n. g. type *Tenia microrhyncha* Krabbe, p. 93; COHN, Z. Anz. xxiii.
- Anonchotenia* n. g. *clava*, n. sp., in *Parus ceruleus*, p. 95; COHN, t. c.
- Bothridium pythionis* Blainv., p. 215; LÜHE, Centrbl. Bakter. xxvii.
- Bothrimonus* Duv. 1842, revised diagnosis, p. 11; LÜHE, Zool. Anz. 1.
- B. fallax*, n. sp. from the Sterlet, pp. 8 & 12; LÜHE, t. c.
- Bothriocephalidae* with marginal genital pores comprise 4 genera, *Abotk* van Ben. type *A. rugosum* (Goeze), *Ancistrocephalus* Montic.
- A. microcephalus* (Rud.), *Fistulicola* Lühe type *F. plicatus*
- Trienophorus* R. type *T. nodulosus* (Pall.), p. 97; LÜHE, Zeitschr. wiss. Zool. lxxviii.
- Bothriocephalus cristatus* Dav., p. 308; GALLI-VALERIO, Centrbl. Ba xxvii.
- B. didelphidis*, n. sp., intestine of *Didelphys azarae*, Brazil, p. 418; ARI Arch. parasit. iii.
- B. sauridae*, n. sp., Fragment only, p. 454; ARIOLA, t. c.
- B. spiraliceps*, n. sp., p. 165; VOLZ, Arch. Naturg. lxvi.
- Bothriocotyle* n. gen. *solinosomum*, n. sp., from *Centrolophus pompilius* p. 219; ARIOLA, Atti Soc. Ligustica xi.
- Bothriotenia* declared spurious, p. 93; LÜHE, Zeitschr. wiss. Zool. lxvi
- Calliobothrium etiobatis*, n. sp., p. 541; SHIPLEY, Zool. Results (Wil Pt. v.
- Choanotenia gongyla*, n. sp., from *Larus ridibundus*, p. 92; COHN, Z. Anz. xxiii.
- Calodela* n. g. *kuvaria*, n. sp., p. 552; SHIPLEY, Zool. Results (Wil Pt. v.
- Cyathocephalinae*, revised diagnosis, p. 9; LÜHE, Zool. Anz. xxiii.
- Cyathocephalus* Kessler, diagnosis, p. 12; LÜHE, t. c.
- Davainea globicaudata*, n. sp., in *Tetrao urogallus* together with *D. urog* p. 95; COHN, t. c.
- Dicranotenia dubia*, n. sp., *Cercocystis* stage only described, 1
- Diaptomus alluaudi*, p. 185; DADAY, Zool. Jahrb. Syst. xiv.
- Dilepis angulata* Rud., p. 126; VOLZ, Arch. Naturg. lxvi.
- Diacoccestus* n. g. *paronai*, n. sp. (Acoleinæ), from *Plegadis guara* p. 50; FUHRMANN, Zool. Anz. xxiii, also Centrbl. Bakter. xx p. 363.
- Diplacanthus serpentulus* (Schr.), p. 135, *stylosus* Rud., p. 141, *farcimii* Batsch, p. 144; VOLZ, Arch. Naturg. lxvi.
- Diplocotyle* Kr., distinct from *Bothrimonus* Duv., pp. 9 & 10; LÜHE, Z. Anz. xxiii.
- Diplophallus* n. g. *polymorphus* (Krabbe), p. 371, from *Recurvirostra himantopus*; FUHRMANN, Centrbl. Bakter. xxviii.
- Drepanidotenia minuta*, p. 84, *apterygis*, p. 87, n. spp., both from *Apt bulleri*; BENHAM, Quart. J. Micr. Sci. xliii.
- D. hemignathi* Shipley, p. 429; SHIPLEY, Fauna Hawaiiensis ii, Pt. iv.
- D. lanceolata* (Bloch), *Cercocystis* stage from *Diaptomus spinosus* I p. 187, *gracilis* (Krab.), *Cercocystis* stage also in *Diaptomus spin* p. 190, *anatina* (Krab.), p. 193, *sinuosa* (Zed.), p. 196, *ratzi*, n. *Cercocystis* only from *Diaptomus asiaticus* Ulj., p. 198, *mesacari* n. sp., *Cercocystis* only from *Diaptomus asiaticus*, p. 200; DA Zool. Jahrb. Syst. xiv.

- Duthiersia fimbriata* (Dies.), p. 217; LÜHE, Centrbl. Bakter. xxvii.
- Echinocotyle linstowi*, n. sp., *Cercocystis* only from *Diaptomus asiaticus* and *spinosus*, p. 203; *polyacantha*, n. sp., *Cercocystis* only from *Diaptomus asiaticus*, p. 206; *mrazeki*, n. sp., *Cercocystis* described by MRÁZEK from *Boeckella brasiliensis* Lubb., p. 208; DADAY, Zool. Jahrb. Syst. xiv.
- Gyrocacia leuce*, n. sp., from *Vanellus cayennensis*, p. 49; FUHRMANN, Zool. Anz. xxiii, also Centrbl. Bakter. xxviii, p. 371; *brevis*, n. sp., from *Charadrius*, Egypt, p. 372; FUHRMANN, t. c.
- Hymenolepis tetraonis*, n. sp.; WOLFFHÜGEL (Abstract) Centrbl. Bakter. xxvii, p. 841. Inaug. Dissert. p. 191, from intestine and cæcum of *Tetrao urogallus*.
- Ichthyotania birói*, p. 980, *saccifera*, p. 981, n. spp., from *Varanus* sp., New Guinea; RÁTZ, C.R. Soc. Biol. lii.
- Idiogenos mastigophora* Krabbe from *Milvus ater* in Turkestan, p. 150; VOLZ, Arch. Naturg. lxvi.
- Mesogoninae* new sub-fam. of *Bothriocephalidae*, p. 388; ARIOLA, Arch. parasit. iii.
- Metroliaesthes* n. g. *lucida*, n. sp.; RANSOM, Tr. Amer. Micr. Soc. xxi, p. 213.
- Palatia* n. g. *varani*, n. sp., p. 548; SHIPLEY, Zool. Results (Willey), Pt. v.
- Paronia* n. g. *carrinoi*, n. sp., p. 846, from *Lorius erythrothorax* and *Cyclopsittacus suavisissimus* in New Guinea and *Ptilonotus* sp. in Sumatra; DIAMARE, Centrbl. Bakter. xxviii, also in Atti Soc. Ligustica xi, p. 141.
- Phyllobothrium dipsadomorphi*, n. sp., p. 550; SHIPLEY, Zool. Results (Willey), Pt. v.
- Prostheocotyle* Mont. declared synonymous with *Tetrabothrium* Rud., p. 365; LINSTOW v. Centrbl. Bakter. xxvii.
- P. diomedæ* Fuhrmann, n. sp., p. 557; SHIPLEY, Zool. Results (Willey), Pt. v.
- Protocephalus ambloplitis* (Leidy), p. 339, *filiicollis* (Rud.), p. 355; BENEDICT, J. Morphol. xvi.
- Schistotenia* n. g. type *Sch. macrorhyncha* (Rud.), p. 276; COHN, Zeitschr. wiss. Zool. lxvii.
- Scyphocephalus bisulcatus* Riggenb., p. 254; LÜHE, Centrbl. Bakter. xxvii.
- Tenia africana*, n. sp., p. 485; LINSTOW, op. cit. xxviii.
- T. alternans*, n. sp., from *Tringa totanus*, p. 96; COHN, Zool. Anz. xxiii.
- T. armigera*, p. 161, *mollis*, p. 163, n. spp., *constricta* Mol., p. 117; VOLZ, Arch. Naturg. lxvi.
- T. leptocéphala* Créplin, parasite of mouse, rat, and man = *T. diminuta* Rud.; PREVITERA, Bull. Acc. Gioen., March 1900, Fasc. lxiii, p. 9.
- T. mychocephala*, p. 981, n. sp., from *Varanus* sp., New Guinea; RÁTZ, v., C.R. Soc. Biol. lii.
- T. zichyi*, n. sp., *cercocystis* only from *Diaptomus asiaticus*, p. 202; DADAY, Zool. Jahrb. Syst. xiv.
- T. (Cænurus) socialis* in thigh of rabbit; GALLIER, Bull. Soc. Normand. (5) iii, p. xxxix.
- T. (Hymenolepis) horrida*, n. sp., p. 1, from *Mus decumanus*; LINSTOW, Arch. Naturg. lxvii.
- Tetrabothrium*, synonymy, p. 365, *cylindraceum* Rud., p. 362, *erostre* Lönnberg, p. 364; LINSTOW, Centrbl. Bakter. xxvii.
- T. macrocephalum* Rud., p. 3; LINSTOW, Arch. Naturg. lxvii.
- Trienophorinae*, subfamily of *Bothriocephalidae* (q. v.), containing those genera which possess marginal genital pores, p. 99; LÜHE, Zeitschr. wiss. Zool. lxvii.



## TREMATODA.

## GENERAL BIOLOGY.

Monograph. Genus *Clinostomum* Leidy; BRAUN, Zool. Jahrb. 5 xiv.

Copulatory apparatus. *Distomum megastomum*, p. 68; JÄGERSKI Centrbl. Bakter. xxvii.

Genital sucker. *Distomum megastomum*, p. 68, and *Levinsonia pygma* p. 732; JÄGERSKIÖLD, L. A., Centrbl. Bakter. xxvii.

Development. Larvæ of *Clinostomum* in Brazilian fishes all be to one species probably *Cl. marginatum* (Rud.). *Clinostomum* larvæ not yet been found in European fishes and the infection of Euroj birds (*Ardea*, *Nycticorax*) perhaps takes place in N. Africa; BRAUN, 2 Jahrb. Syst. xiv, p. 42.

Nervous system by Golgi's Method of *Distomum hepaticum*, p. 3 HAVET, Cellule xvii.

Parasitology. Distomids in pericardium of a Japanese Helicid, *E. despecta*; JACOBI, Centrbl. Bakter. xxviii, p. 27.

Infection. *Distomum felinum* in human liver in East Prussia, p. 4 ASKANAZY, Centrbl. Bakter. xxviii.

Pathogenic action of *Polystomum integerrimum* on the urogen apparatus of the frog, p. 162; PÉGOR, C.R. Soc. Biol. lii.

Morbid Histology. Action of *Cercaria* on the tissues of *Palud* p. 345; CHATIN, C.R. Soc. Biol. lii.

Reproductive System. *Distomum ampullaceum*, p. 592; BUTTEL-REE Zool. Anz. xxiii.

Statistics. Of 140 specimens of *Pleuronectes limanda*, 15 were infe by *Aporocotyle simplex*, i.e. 11.5 p.c., p. 63; ODHNER, Centrbl. Bal xxvii. Out of 50 cats in only 4 was the liver infected with *Diston felinum*, p. 516; RÄTZ, v., op. cit. xxviii.

Suctorial apparatus. Suckers of *Distomum tubiporum* tubular jections .5 mm. long, the length of worm being 2.6 mm. and width 1.4 r p. 388; BRAUN, Zool. Anz. xxiii. Accessory sucker in *Podocotyle furca* (Brems.), p. 489; LÜHE, t. c.

## DISTRIBUTION.

*Pleuronectes*. *Aporocotyle*, new genus of ectoparasitic Trematodes, p. ODHNER, Centrbl. Bakter. xxvii.

Amphibia. *Distomum arcanum*, n. sp. in pylorus of American fr NICKERSON, Amer. Natural. xxxiv, p. 811.

Reptilia. Distomids from Ophidia and Lacertilia, p. 555; Li Centrbl. Bakter. xxviii.

Aves. Distomidæ from gall-bladder etc. of sea-birds, *Larus*, *Vulpas Somateria* etc., p. 12; ODHNER, Centrbl. Bakter. xxviii.

Fen-snipe (*Telmatias major*). New Holostomid (*Diplostomum ma stomum*), p. 33; JÄGERSKIÖLD, Centrbl. Bakter. xxvii.

Chiroptera. *Fasciolidæ*, p. 387; BRAUN, Zool. Anz. xxiii.

France. Trematode Parasites of the bile-ducts of indigenous birds belonging to genus *Dicrocoelium* (Duj.) Looss; RAILLIET, C.R. Soc. I lii, p. 239.

Mediterranean. Distomids from the gall-bladder of Mediterranean fishes, p. 504; LÜHE, Zool. Anz. xxiii.

North America. Synopsis of monogenetic Trematodes; PRATT, A. Natural. xxxiv, p. 645. Ectoparasitic Trematodes from Rhode Isl p. 263; GOTO, J. Coll. Japan xii.

Canada. Trematodes of Frogs and Turtles; STAFFORD, Zool. Jahrb. Syst. xiii.

Brazil. Species of *Clinostomum* from mouth, pharynx and œsophagus of Brazilian Birds, p. 24; BRAUN, Centrbl. Bakter. xxvii.

Fasciolids of Brazilian bats, pp. 388-391; BRAUN, Zool. Anz. xxiii.

Australia and Tasmania. *Temnocephalæ*, p. 430; HASWELL, P. Linn. Soc. N. S. Wales xxv.

## SYSTEMATIC.

*Acanthochoasmus* n. n. for *Acanthostomum*, p. 603; LOOSS, Zool. Anz. xxiii.

*Acanthocotyle verrilli*, p. 283, n. sp.; GOTO, J. Coll. Japan xii.

*Allocreadum* n. n. for *Creadium*, p. 602; LOOSS, Zool. Anz. xxiii.

*Anaporrhutum* n. g. *albidum*, n. sp. from celom and pericardium of *Aetiobatis narinari*; OFENHEIM, Zeitschr. Naturw. 73, p. 145.

*Anisocæcium* n. g. type *A. capitellatum* (Rud.) from gall-bladder of *Urano-scopus scaber*, p. 504, allied to *Gymnophallus* q. v.; LÜHE, Zool. Anz. xxiii.

*Aporocotyle* n. g. *simplex*, n. sp., gills of *Pleuronectes limanda* and *flesus*, p. 62; ODHNER, Centrbl. Bakter. xxvii.

*Asiotrema* n. n. for *Astia*, p. 602; LOOSS, Zool. Anz. xxiii.

*Braunina* n. g. from the intestine of Dolphin and *Squalus*, p. 19; HEIDER, Verh. Deutsch. zool. Ges. 1900.

*Campula oblonga* Cobb. from bile-ducts of *Phocæna communis*, p. 249; BRAUN, Centrbl. Bakter. xxviii.

*Clinostomum detruncatum*, œsophagus of *Mycteria americana* and *Ciconia americana*, p. 29: *sorbens*, œsophagus of *Tantalus loculator*: *heluana*, mouth of *Ardea cærulea* and *Nycticorax gardeni*: *lambitans* œsophagus of a heron, p. 30: *foliiforme*, pharynx and œsophagus of *Ardea purpurea*, p. 31, n. spp.; BRAUN, op. cit. xxvii.

*C. heterostomum* Rud. differs from all other species of the genus by the presence of 9 to 11 pairs of long cœca at the outer sides of the intestinal trunks, p. 141; BRAUN, Zool. Anz. xxiii.

*Cotylogonimus* Lühe to give way to *Cenogonimus* Looss, p. 607; LOOSS, t. c.

*Cryptocotyle* Lühe to give way to *Tocotrema* Looss, p. 607; LOOSS, t. c.

*Derogenes* n. g. *ruber* n. sp. from gall-bladder of *Trigla lineata*, p. 507; LÜHE, t. c.

*Deutrobaris* n. n. for *Baris*, p. 602; LOOSS, t. c.

*Dicrocoelium panduriforme*, p. 240 from gall-bladder of *Pica pica*: *petiolatum* from liver of *Garrulus glandarius*, p. 241: *lobatum*, liver of *Accipiter nisus*, p. 241, n. spp.; RAILLIET, C.R. Soc. Biol. lii.

*Dionchus* n. g. *agassizi* n. sp., p. 286; GOTO, J. Coll. Japan xii.

*Diplostomum macrostomum* n. sp., p. 33, intestine of *Telmatias major*; JÄGERSKJÖLD, Centrbl. Bakter. xxvii.

*Ditomon arcanum* n. sp., p. 811; NICKERSON, Amer. Natural. xxiv.

*D. caudatum* v. Linstow, 1873 = *D. leptostomum* Olsson, 1876; v. LINSTOW, Zool. Anz. xxiii, p. 85.

*D. lancea* Dies, p. 579; WESKI, Centrbl. Bakter. xxvii.

*D. pelagicum*, New Brunswick, p. 399: *hospitale*, mid-gut of *Diemyctilus ciridescens*, p. 403: *quietum*, gut of frog, p. 403: *chelydra*, gut of *Chelydra serpentina*, p. 406: *angustum*, gut of *Chrysemys picta*, p. 407, n. spp.: *tetracystis* Gastaldi, 1854, p. 410, encapsuled in throat of *Rana catesbeiana*; STAFFORD, Zool. Jahrb. Syst. xiii.

*D. philodryadum* West, from *Philodryas schottii*, Brasil = *Opisthogonimus philodryadum* (West), p. 743; LÜHE, Centrbl. Bakter. xxviii.

*D. tubiporum* from *Lespertilio*, Brazil, p. 388: *matucosus* f

- noctua* and *lasiopterus*, p. 389: *peregrinum* from *Rhinolophus ferraequinum*, p. 389: *limatulum*, Brazil, p. 389, n. spp.; BRAUN, Zool. Anz. xxiii.
- D. ampullaceum*, n. sp. probably from the Golden Mackerel, *Coryphaea* often called dolphin by seamen, p. 586: *siemensii* n. sp. from stomach of *Sphyræna barracuda*, p. 596; BUTTEL-REEPEN, H. v., t. c.
- D. saginatum*, n. sp., p. 437, from the common bile-duct of *Ardea alba* v. RÄTZ, Centrbl. Bakter. xxviii.
- D. rhyacophila*, n. sp., p. 370; LINSTOW, Arch. mikr. Anat. lvi.
- Dolichodemus* n. n. for *Dolichosomum*, p. 603; LOOSS, Zool. Anz. xxiii.
- Emoleptalea* n. n. for *Leptalea*, p. 602; LOOSS, t. c.
- Enodiotrema* n. n. for *Enodia*, p. 602; LOOSS, t. c.
- Epibdella scienæ* P. J. v. Ben., p. 269; GOTO, J. Coll. Japan xii.
- Eumegacetes* n. n. for *Megacetes*, p. 602; LOOSS, Zool. Anz. xxiii.
- Fasciola bergi*, n. sp., p. 193, from body-cavity of *Raja platana*; PARO, Comun. Mus. Buenos Aires i, pp. 190-197, 1 fig.
- Gymnophallus* n. g. *choledochus*, p. 18, *burnicola*, p. 20, n. spp. T. of genus *G. deliciosus* (Ols.), p. 14; ODHNER, Centrbl. Bakter. xxvi.
- Halipegus*, n. sp.?, p. 558, from *Coluber olivaceus*, Brazil, apparently identical with *H. orocaudatus* (Vulpian) from *Rana esculenta* temporaria of Europe; LÜHE, t. c.
- Harmostomum* n. g. type *Distomum leptostomum* Ols.; BRAUN, Zool. A. xxii 1899, p. 492, also Zool. Jahrb. Syst. xiv, 1900, pp. 5 & 12. T. name, contained in a note, was overlooked last year; it takes priority of *Heterolope* Looss.
- Heterolope* Looss gives way to *Harmostomum* Braun q. v.; BRAUN, Z. Jahrb. Syst. xiv, p. 13.
- Ityogonimus* Lühe to give way to *Dolichodemus* Looss, p. 607; LOOSS, Zool. Anz. xxiii.
- Lecithodendrium cordiforme*, n. sp. in *Molossus* sp. Brazil, p. 390; BRAUN, t. c.
- Levinsonia pygmaea* (Levinson) from gut of *Larus* and *Somateria*; p. 732: var. *similis* n. var. from *Larus*, p. 737; JÄGERSKIÖLD, Centrbl. Bakter. xxvii.
- Levinsoniella* n. n. for *Levinsonia* pre-occupied; WARD, Tr. Amer. Microsc. Soc. xxii, p. 176.
- Microcotyle pomatomi*, p. 278: *stenotomi*, p. 279: *hiatulæ*, p. 281: *longicauda*, p. 282, n. spp.; GOTO, J. Coll. Japan xii.
- Microphallus* n. g. type *Dist. opacum* Ward, 1894, from *Amia calva*; WARD, Tr. Amer. Microsc. Soc. xxii, p. 175.
- Microscaphidium* n. n. for *Microscapha*, p. 602; LOOSS, Zool. Anz. xxiii.
- Monostomum amiuri*, Swim-bladder of *Amiurus nebulosus*, p. 402, n. sp. STAFFORD, Zool. Jahrb. Syst. xiii.
- M. trigonocephalum* Rud., detailed description; SHIPLEY, Zool. Res. (Willey), Part v, pp. 532-540.
- Opisthogonimus*, n. g., *lecithonotus*, n. sp., p. 555 = *O. dryadum* (West), p. 743; LÜHE, Centrbl. Bakter. xxviii.
- Opisthorchis pseudofelineus*, n. sp., p. 180 (footnote); WARD, Tr. Amer. Microsc. Soc. xxii.
- Orchidasma* n. n. for *Anadasmus*, p. 602; LOOSS, Zool. Anz. xxiii.
- Phyllonella hippoglossi* (O. F. M.), p. 264; GOTO, J. Coll. Japan xii.
- Plagiorchis* Lühe, genus rejiciendum, p. 607; LOOSS, Zool. Anz. xxiii.
- Podocotyle furcatum* (Brems.), pp. 488-492; LÜHE, t. c.
- Polystomum hassalli*, n. sp., p. 276; GOTO, J. Coll. Japan xii.
- Prosthogonimus* Lühe, to give way to *Prymnoprion* Looss, p. 608; LOOSS, Zool. Anz. xxiii.
- Ptychogonimus* n. g. type *Pt. megastomus* (Rud.), p. 489; LÜHE, t. c.
- Rhopalias coronatus* (Dies.), *horridus* (Dies.) and *baculifer* n. sp. all fr

intestine of Brazilian *Didelphys*; they are proboscis-bearing Fasciolidae related to the *Echinostomina*, p. 28; BRAUN, t. c.  
*Schisturus* Rud., genus rejiciendum, p. 492; LÜHE, t. c.  
*Stephanochasmus* n. n. for *Stephanostomum*, p. 603; LOOSS, t. c.  
*Stomylotrema* n. n. for *Stomylus*, p. 602; LOOSS, t. c.  
*Telorchis* Lühe to read *Telorchis* Looss, p. 608; LOOSS, t. c.  
*Temnocephala tasmanica*, p. 430, *aurantiaca*, p. 431, *cæca*, p. 432, n. spp.; HASWELL, P. Linn. Soc. N. S. Wales xxv.  
*Urotrema* n. g. *scabridum*, n. sp. in Brazilian bats, p. 390; BRAUN, Zool. Anz. xxiii.

## NEMATHELMINTHES.

### NEMATODA.

#### GENERAL BIOLOGY.

Frequent occurrence of *Filaria* in *Lepidoptera*, see *Insecta*, Titles; SCHULTZ (1166).

Anatomy. *Trichocephalus*, p. 779; HEINE, Centrbl. Bakter. xxviii.

Anhydrobiosis. Resistance of the eggs of *Ascaris megalocephala*; BATAILLON, C.R. Soc. Biol. lii, pp. 435 & 437.

Culture of free-living Nematoda; MAUPAS, Arch. Zool. exp. (3) viii, p. 463.

Dermatology. *Filaria*; DUBREUILH, Centrbl. Bakter. xxviii, p. 456.

Development of *Ascaris decipiens* Krabbe; the larvæ occur in closely packed masses with the head end imbedded in the gastric mucosa of *Trichechus rosmarus* and *Phoca barbata*, where they undergo several ecdyses and then become free and pass into the intestine of the same host where they become sexually mature. In like manner the larva of *Nemat-oxy longicauda* Linst. grows in the lung of *Triton teniatus*, *alpestris* and *cristatus*, finally migrating into the intestine of the same host where it becomes mature, pp. 119-124; LINSTOW, Fauna Arctica. *Sclerostomum equinum* Duj., p. 846; CONTE, C.R. Ac. Sci. cxxxi.

Life-history. *Ancylostoma duodenale*; GILES, Centrbl. Bakter. xxvii, p. 83.

Parasitology. Eye-parasites; KRÄMER, Centrbl. Bakter. xxviii, p. 517; SUPINO, Rend. Acc. Lincei (5) ix-1, p. 85. Nematodes of Coffee-Plant, p. 676; ZIMMERMANN, J. R. Micr. Soc. 1900. Penetration of *Anguillula intestinalis* into the intestinal wall, p. 569; ASKANAZY, Centrbl. Bakter. xxvii.

Parasitology of *Periplaneta americana*, p. 34; MAGALHÃES, Arch. parasit. iii. Elephant, p. 509; PIANA e STAZZI, Arch. parasit. iii.

Anchylostomiasis. PROWE, Centrbl. Bakter. xxvii, p. 83; KUBORN, Centrbl. Bakter. xxviii, p. 215. Possible connection between the practice of geophagy in Fiji and the occurrence of the intestinal parasite *Ancylostomum duodenale* in Indian coolies who work on the sugar plantations; CORNEY, DAVID & GUTHRIE, J. R. Soc. N. S. Wales xxxiii, p. 225.

Epizootic. *Strongylus capillaris* in the goat, p. 468; SCHLEGEL, Centrbl. Bakter. xxvii.

Filariasis of the human eye; SUPINO, Rend. Acc. Lincei (5) ix, sem. i, p. 85. Transmission by mosquitoes, p. 280; BLANCHARD, Arch. parasit. iii.

*Filaria bancrofti*, p. 152; SONSINO, Centrbl. Bakter. xxviii.

Strongylosis. Calcification of lung of a hare induced by *Strongylus commutatus*, p. xlii; SCHEURLEN, Jahresb. Ver. Württemb. 66.

Trichinosis; PIRL, Centrbl. Bakter. xxvii, p. 118; BERTARELLI (32).  
Gapes caused by *Syngamus trachealis* and the treatment; KILGUS, Centrbl. Bakter. xxvii, p. 466.

Histology. Phagocytic Organ (Zellkörper) in *Ascaris decipiens*, p. 1; LINSTOW, Fauna Arctica.

Parturition. Oviparity, Ovoviviparity, Viviparity and Embryonic parasitism in free-living Nematodes, dependent upon nutrition, p. 375; COSSA, C.R. Soc. Biol. lii.

Pathogenic action of *Ascaris lumbricoides*, p. 70; GUIART, Arch. parasit. iii.

Phagocytic Organs of parasitic Nematoda, p. 488; NASSONOW, Arch. mikr. Anat. iv.

Phytopathology. *Heterodera radiculicola* in roots of garden Clematis; CHIFFLOT, Bull. Soc. Saone, 26th Ann. p. 128, also referred to by VUILLIARD, Bull. Soc. Nancy sciences (sér. 3) i.

Pecilogony. Effect of nutrient matrix on the development of *Rhabdionchus* Btsli, p. 374; CONTE, C.R. Soc. Biol. lii.

Sexuality. Free-living Nematoda; MAUPAS, Arch. Zool. exp. (3) i, p. 463.

Statistics. Horses, asses and mules infected with *Spiroptera reticulata* (Dies.); PADER, Bull. Soc. Nimes xxvii, p. 59.

Traumatism. Attachment of *Uncinaria radiata* to intestinal wall of the ox; RIZZO, Rend. Acc. Lincei (5) ix, sem. 2, p. 107.

Treatment. Gape-worm (*Syngamus trachealis*), p. 755. Thymol as best nematocide for *Heterakis*; THEOBALD, Centrbl. Bakter. xxvii.

Undetermined Nematode from perivisceral cavity of *Echinus esculentus* from Plymouth, p. 288; SHIPLEY, Quart. J. Micr. Sci. xlv.

## DISTRIBUTION.

Arctic. List of Arctic and subarctic parasitic and free-living Nematodes, pp. 129-131; LINSTOW, Fauna Arctica.

Antarctic. List of subantarctic parasitic and free-living Nematodes, pp. 131 & 132; LINSTOW, t. c.

Switzerland. Nematode Fauna of mountain lakes; ZSCHOKKE, Deutscher Schweiz. Ges. p. 87.

Hungary. Nematoden, p. 186; RÁTZ, Termes. Füzetek xxiii.

Algeria. Free-living Nematoda; MAUPAS, Arch. Zool. exp. (3) i, p. 463.

Egypt. Nematoda of Equidae; LOOSS, Centrbl. Bakter. xxvii, pp. 183 & 184.

N. America. Gordiacea, p. 95; MONTGOMERY, T. H., Jr., Biol. Bull.

*Sclerostomina* of Ruminants, p. 102; RAILLIET, Arch. parasit. iii.

Uncinariasis. Species of *U.* in Canidae and Felidae, p. 82; RAILLIET, Arch. parasit. iii.

## SYSTEMATIC.

*Alaimus thamugadi*, n. sp., p. 575; MAUPAS, Arch. Zool. exp. (3) viii.

*Anoplostoma gracile*, n. sp., p. 128, Taf. vii, figg. 42 & 43, Spitzberg; LINSTOW, Fauna Arctica.

*Aphelenchus agricola* de Man, p. 571; MAUPAS, Arch. Zool. exp. (3) viii.

*Ascaris brevicauda*, n. sp., p. 371; LINSTOW, Arch. mikr. Anat. lvi.

*A. decipiens* Krabbe, stomach of seals and walruses, p. 119, Taf. vii, figg. 1-20 and vii, figg. 21-27; LINSTOW, Fauna Arctica.

*A. osculata* Rud. differing from *A. decipiens* in form of lips; mature ♀ from stomach of *Phoca barbata*, p. 124, Taf. vii, figg. 28-34; LINSTOW, t. c.

- Cephalobus dubius*, p. 555, *lentus*, p. 563; MAUPAS, Arch. Zool. exp. (3) viii.
- Chordodes cameranensis*, n. sp., p. 95, Panama; MONTGOMERY, T. H., Jr., Biol. Bull. i.
- Cyathostomum labratum*, p. 158, *coronatum*, p. 159, *bicoronatum*, p. 159, n. spp., *poculatum*, p. 184, *calicatum*, p. 185, *alveatum*, p. 185, *catinatum*, p. 186, *nassatum*, p. 187, *radiatum*, p. 187, *elongatum*, p. 188, *auriculatum*, p. 189, n. spp.; LOOSS, Centrbl. Bakter. xxvii.
- Dacnitis gadorum* v. Ben., p. 125, Taf. vii, fig. 35; LINSTOW, Fauna Arctica.
- Diplogaster robustus*, p. 541, *minor*, p. 549; MAUPAS, Arch. Zool. exp. (3) viii.
- Echinocephalus striatus* Montic., p. 560; SHIPLEY, Zool. Results (Willey) Pt. v.
- Enoplus edentatus*, n. sp., Spitzbergen, p. 127, Taf. vii, figg. 39-41; LINSTOW, Fauna Arctica.
- Filaria* of the human eye, synonymy; SUPINO, Rend. Acc. Lincei (5) ix-1, p. 85.
- F. bancrofti* Cobbold, p. 76, *magalhãesii* Manson, p. 79, and other species of blood *Filaria*; v. LINSTOW, Zool. Anz. xxiii, p. 76.
- F. hæmorrhagica* is subcutaneous tissue of horse, p. 517; RÄTZ, Centrbl. Bakter. xxviii.
- Gnathostoma shipleyi* Stossich, p. 560; SHIPLEY, Zool. Results (Willey), Pt. v.
- G. hispidum* Fedtsch., p. 184; RÄTZ, Termes. Fuzetek xxiii.
- Gyalocephalus* n. g. *capitatus*, n. sp., p. 191; LOOSS, Centrbl. Bakter. xxvii.
- Heterakis distans* Rud., p. 5; LINSTOW, Arch. Naturg. lxvii.
- Hystrix tricolor* Duj., p. 183; RÄTZ, Termes. Fuzetek xxiii.
- Macrolaimus crucis*, n. sp., p. 578; MAUPAS, Arch. Zool. exp. (3) viii.
- Oxyuris bulhœni*, n. sp., p. 50. Intestine of *Periplaneta americana* at Rio de Janeiro; MAGALHÃES, Arch. parasit. iii.
- Plectes cirratus* Bast., p. 567; MAUPAS, Arch. Zool. exp. (3) viii.
- Rhabditis elegans* Maupas, p. 477, *caussaneti* Maupas, p. 494, *marionis*, p. 506, Normandy, *duthiersi*, p. 513, *perrieri*, p. 518, *viguieri*, p. 527, n. spp., *dolichura* Schneider, p. 531, *coronata* Cobb, p. 536, *schneideri* Bütschli, p. 553; MAUPAS, t. c.
- Sclerostomum equinum* (Müller) (= *Strongylus armatus* R. = *S. neglectus* Poeppel), p. 154, *edentatum*, n. sp., p. 155, *vulgare*, n. sp. (= *Strongylus armatus* Rud. sensu Poeppel), p. 155; LOOSS, Centrbl. Bakter. xxvii.
- S. pistomum*, n. sp., p. 515. Intestine of Elephant; PIANA e STAZZI, Arch. parasit. iii.
- S. appendiculatum* Molin., p. 560; SHIPLEY, Zool. Results (Willey), Pt. v.
- Spilophora punctata*, n. sp., Bären-Insel among dead marine animals, p. 127, Taf. vii, fig. 38; LINSTOW, Fauna Arctica.
- Spiroptera corni*, n. sp., p. 362, *obtusa* Rud., from stomach of *Mus musculus*, *sylvaticus* and *decumanus*, the larva occurs encapsuled in *Tenebrio molitor*, p. 363; LINSTOW, Arch. mikr. Anat. lvi.
- S. reticulata* (Dies.) Railliet, description; PADER, Bull. Soc. Nimes xxvii, p. 59.
- S. reticulata* Dies. in peritoneum of horse, also in the *ligamentum nucha*, etc., p. 517; RÄTZ, Centrbl. Bakter. xxviii.
- Thoracostoma denticaudatum* Schn., p. 126, Taf. vii, figg. 36 & 37. Spitzbergen under dead marine animals; LINSTOW, Fauna Arctica.
- Trichosoma brevicolle* Rud., small intestine of geese, *caudistatum* Molin., small intestine of domestic fowl, *retusum* Railliet, *coca* of *ferus longispiculum* Sansino, intestine of *Python molurus* Gr.: ■ Bull. Ac. Cracovie 1900, p. 183.

*Triodontus* n. g. type *Sclerostomum robustum* Giles, pp. 153 & 190, p. 190, *serratus*, p. 191, n. spp.; LOOSS, Centrbl. Bakter. xxvii. *Uncinaria os-papillatum*, n. sp., p. 512. Intestine of Elephant; P. STAZZI, Arch. parasit. iii.

## ACANTHOCEPHALA.

### SYSTEMATIC.

*Apororhynchidae* new family with single genus and species *A. hemi-* Shipley, p. 440; SHIPLEY, Fauna Hawaiiensis ii, Part iv.  
*Echinorhynchus aurantiacus* Risso, 1826 = *E. pellucidus* F. S. Le 1828 = *E. annulatus* Molin, 1858; MONTICELLI, Monit. Zool. i supp., p. 36.

## CHÆTOGNATHA.

### DISTRIBUTION.

Antarctic. Of the 31 known species of Chætognatha 6 occur Antarctic Region. *Sagitta hexaptera*, *S. bipunctata* and *S. serrata* are cosmopolitan, *Krohnia hamata* is bipolar; STEINHAUS, H. Mag. v-2, p. 9.

Valencia Harbour. Chætognatha, p. 745. Description of *Sagitta* Steinhaus (1896), p. 746; GAMBLE, P. Irish Ac. (3) v.

## ROTIFERA.

### GENERAL BIOLOGY.

Anatomy. Detailed description of external morphology, adhesive skin and tissues, alimentary, nervous and excretory systems of *A. vorax* (Leidy); GAST, Zeitschr. wiss. Zool. lxvii.

Bionomics. *Apsilus vorax* (Leidy); GAST, t. c. p. 168.

Habits and Distribution of species of *Lacinularia*; ROUSSEL Quekett Club (2) vii, p. 313.

Iconography. HÆCKEL, Kunst-Formen der Natur.

Planktometry. BUCHET, Rev. Scient. Sér. 4, xiv, p. 5: BURCK Mt. Ges. Luzern iii, p. 130: WARD, Tr. Amer. Micr. Soc. xxi, p. 227

Plankton. STEUER, Biol. Centrbl. xx, p. 25: FUHRMANN, t. c. p. 120: AMBERG, t. c. p. 283: BACHMANN, t. c. p. 386: BURCKHARD p. 426: WESENBERG-LUND, t. c. pp. 606 & 644: WHIPPLE, Tr. Micr. Soc. xxi. Elbe near Podiebrad, Bohemia. (No details), FRIČ & VAVRA, Zool. Anz. xxiii. Echo River, Mammoth Cave, Ken recently derived from epigeal waters and presenting few if any stygian forms; KOFOLD, Tr. Amer. Micr. Soc. xxi, p. 113. ZYKOFF Anz. xxiii, p. 625: BURCKHARDT, Rev. Suisse Zool. vii, p. 412: A Vierteljahrschr. Ges. Zurich xlv, p. 59: ZSCHOKKE, Denk. Schwei 1900, p. 92.

## DISTRIBUTION.

Odessa. Enumeration of 5 species of Rotatoria in the Chadjibej Liman, p. 496; BUTSCHINSKY, Zool. Anz. xxiii.

United States. Rotatoria, p. 67; JENNINGS, Bull. U. S. Fish Comm. 1900.

## SYSTEMATIC.

*Mastigocerca hamata* var. *bologoënsis* n. var., *birostris*, n. sp., Lake Bologoë, pp. 622 & 623; MINKIEWICZ, Zool. Anz. xxiii.

*Notogonia ehrenbergii* Perty; SMITH, Tr. Amer. Micr. Soc. xxi, p. 95.

*Notops pelagicus*, n. sp., p. 82; JENNINGS, Bull. U. S. Fish Comm. 1900.

*Pleurotrocha parasitica*, n. sp., p. 84; JENNINGS, t. c.

## GASTROTRICHA.

### DISTRIBUTION.

Switzerland. Chætonotinae of the mountain lakes; ZSCHOKKE, Denk. Schweiz. Ges. p. 109.

## HEMICHORDA.

### GENERAL BIOLOGY.

*Actinotrocha*. Metamorphosis; ROULE, C.R. Soc. Biol. lii, pp. 439 & 441. The two Mediterranean species of *Phoronis* have as larval form *Actinotrocha metschnikovi*; the Atlantic *Phoronis hippocrepis* (closely allied to *P. kowalevskyi* of Mediterranean) has *Actinotrocha mülleri* as larva. The larval differences are independent of the specific distinctions, p. 217; ROULE, Ann. Sci. Nat. sér. 8, xi.

Affinities of *Phoronis*, p. 927; ROULE, C.R. Ac. Sci. cxxx.

Anatomy and development of *Phoronis buskii*; MASTERMAN, Quart. J. Micr. Sci. xliii, p. 375.

Ciliated epidermis of *Balanoglossus*; STUDNIČKA, SB. Bohmisch. Ges. 1899, No. xxxv.

Development of *Phoronis*, p. 51; ROULE, Ann. Sci. Nat. sér. 8, xi. Mesoderm of *Phoronis*; MASTERMAN, Quart. J. Micr. Sci. xliii, p. 375; ROULE, Zool. Anz. xxiii, p. 425.

*Enteropneusta*. METCALF, Amer. Natural. xxxiv, p. 123.

Parasitology. Aplosporidia in body-cavity of *Ptychodera minuta*, p. 259; CAULLERY et MESNIL, C.R. Soc. Biol. lii.

Stomochord of *Harrimania*; RITTER, P. Washington Ac. ii, p. 111.

### DISTRIBUTION.

*Actinotrocha* at Cullercoats; BRADY, Nat. Hist. Tr. Northumb. xiii, p. 442.

English Channel. Discovery of a new species of *Balanoglossus* s. str.; CAULLERY et MESNIL, C.R. Soc. Biol. lii, p. 256.

Alaska. *Harrimania maculosa*; RITTER, P. Washington Ac. ii, p. 111.

California. *Dolichoglossus intermedius*; RITTER, t. c.

New Zealand. *Balanoglossus*; BRADY, N. Z. Land Inst. xxii.



## SYSTEMATIC.

*Actinotrocha*-larva of *Phoronis hippocrepia* Wright, in Valencia Harbour, p. 690; BROWNE, P. Irish Ac. (3) v.

*Balanocephalus* nov. mut. for *Balanoglossus* s. str.; HARMER, P. Cambridge Soc. x, p. 190.

*Balanocephalus koehleri*, n. sp., Cape de la Hague allied to *B. tupperi*. Length 5-6 c.m. width 1 mm. to 1.5 mm. maximum: specimens of 4 c.m. have voluminous mature genital glands: 8 specimens found in the tidal zone in small gravel-beds in rock-pools, 25 pairs of gill-slits; CAULLERY et MESNIL, C.R. Soc. Biol. lii, p. 256.

*Dolichoglossus intermedius*, n. sp., California; RITTER, P. Washington Ac. ii, p. 122, pl. vii, fig. 9.

*Harrimania* n. g. *maculosa*, n. sp., Alaska, like *B. tupperi* in external characters. [Balanoglossidæ.] RITTER, P. Washington Ac. ii, p. 111.

*Rhabdopleura* recorded from Lat. 61° 41' Long. 3° 19'E., 403 metres, temperature 6°C., p. 24; NORDGAARD on Polyzoa of Norwegian N. Atlantic Exped. 1876-1878, Christiania, 1900.

*Tornaria krohnii* Bourne, in Valencia Harbour, p. 690; BROWNE, P. Irish Ac. (3) v.

# XVI. COELENTERATA.\*

By

ARTHUR WILLEY, D.Sc.

## CONTENTS.

	Page		Page
I. TITLES . . . . .	2	ANTHOZOA	
II. SUBJECT-INDEX.		General Biology and Dis-	
COELENTERATA (collectively)		tribution . . . . .	14
General Biology . . . . .	7	Alcyonaria	
HYDROZOA		(a) General Biology . . . . .	15
Hydroidea (including Hy-		(b) Distribution . . . . .	15
dromedusæ).		(c) Systematic . . . . .	15
(a) General Biology . . . . .	8	Antipatharia	
(b) Distribution . . . . .	9	(b) Distribution . . . . .	17
(c) Systematic . . . . .	9	(c) Systematic . . . . .	17
Hydrocorallina		Actiniaria	
(a) General Biology . . . . .	12	(a) General Biology . . . . .	17
(b) Distribution . . . . .	12	(b) Distribution . . . . .	17
(c) Systematic . . . . .	12	(c) Systematic . . . . .	18
Siphonophora		Ceriantharia	
(a) General Biology . . . . .	12	(c) Systematic . . . . .	19
(b) Distribution . . . . .	12	Zoantharia	
(c) Systematic . . . . .	12	(a) General Biology . . . . .	19
†Graptolithida		(b) Distribution . . . . .	19
(b) Distribution . . . . .	13	(c) Systematic . . . . .	19
(c) Systematic . . . . .	13	Madreporaria	
CTENOPHORA		(a) General Biology . . . . .	20
(a) General Biology . . . . .	13	(b) Distribution . . . . .	20
(b) Distribution . . . . .	13	(c) Systematic . . . . .	20
(c) Systematic . . . . .	13	†Rugosa	
SCYPHOZOA		(b) Distribution . . . . .	23
(a) General Biology . . . . .	13	†Tabulata	
(b) Distribution . . . . .	14	(b) Distribution . . . . .	24
(c) Systematic . . . . .	14	(c) Systematic . . . . .	24

\* The Editor regrets that owing to the business of the Recorder in ~ with his departure for Ceylon, this subject has not been quite ~ The omissions will be made good in next year's Record.

## I. TITLES.\*

1. AGASSIZ, A. Explorations of the "Albatross" in the Pacific. *A J. Sci.* (4) ix, pp. 33-43, 109-116, 193-198, 369-374.  
See also *Science* (n. s.) xi, pp. 92, 288, 574.
2. ALLEN, C. M. A contribution to the development of *Paryptia* or *Biol. Bull.* i, pp. 291-315, pls. i-iii and 4 figg.
3. ALLEN, E. J. & TODD, R. A. The fauna of the Salcombe Est. *J. Mar. Biol. Ass. (n. s.)* vi, Cœlenterata, pp. 185-187.
4. ANDREWS, C. W. A Monograph of Christmas Island (Indian Oc. London, 1900. [Cf. GREGORY (41).])
5. ANDREWS, E. C. Notes on the Limestones and general geology of Fiji Islands, with special reference to the Lau group. Based on surveys made for Alexander Agassiz, with a preface by T. W. I. worth David. *Bull. Mus. Harvard* xxxviii, pp. 1-50, 40 pls.
6. APPELLÖF, A. Studien über Actinien-Entwicklung. *Bergens Aarbog* 1900, No. 1, pp. 1-99, 4 pls. and 13 text-figg.
7. ASHWORTH, J. H. Report on the *Xenidae* collected by Dr W. Zool. Results (Willey), Part iv, pp. 509-530, pls. lii & liii.
8. BAUMONT, W. I. The fauna and flora of Valencia Harbour on West Coast of Ireland. vii. The results of Dredging and S. collecting. *P. Irish Ac.* (3) v.  
Cœlenterata, pp. 766-769.
9. —. The fauna and flora of Valencia Harbour on the West ( of Ireland. ix. The Lucernaridae. T. c. pp. 806-811.  
BEDOT, M. [See PICTET, C. & BEDOT, M. (85)].
10. BERGER, E. W. "Cubomedusæ of Jamaica." *J. R. Micr. Soc.* p. 589.  
Abstract of paper not contained in any scientific library in Lo to which the Recorder has had access, from Mem. Johns Hop Univ. iv, pp. 1-84, 3 pls.
11. BERNARD, H. M. On the structure of *Porites*, with preliminary on the soft parts. *J. Linn. Soc.* xxvii, pp. 487-503, pl. 35, text-fig.
12. —. On the Madreporaria collected by Mr C. W. Andrew Christmas Island. *P. Zool. Soc. London* 1900, pp. 119-127.
13. BIGELOW, R. P. The anatomy and development of *Cassiopea x. chana*. *Mem. Boston Soc.* v, pp. 191-236, pls. 31-38 and text-fig.
14. BLACKBURN, W. Lucernarians. *Tr. Manchester Micr. Soc.* pp. 59-66, pl. iv.
15. BONNEVIE, K. Hydroida. Norwegian N. Atl. Exp. 1876-1878 xxvi, 1899, pp. 1-103, 8 pls., 3 figg. and 1 map.
16. BOURNE, G. C. The *Anthozoa*. Lankester's Treatise on Zoc Part II, Chapter vi, 84 pp., text-figg.
17. —. The *Ctenophora*. T. c. Chapter vii, 25 pp., text-figg.

---

\* An asterisk prefixed to a quotation indicates that the Recorder has not the Journal or Work referred to.

18. BRADY, G. S. An Afternoon's Dredging off Cullercoats. Nat. Hist. Tr. Northumb. xiii, pp. 442-444.  
*Alcyonium digitatum*.
19. BROWNE, E. T. The Fauna and Flora of Valencia Harbour on the West Coast of Ireland. i. The Pelagic Fauna (1895-98). P. Irish Ac. (3) v, pp. 667-693, pl. 19.  
Cœlenterata, pp. 677-685.
20. —. The Fauna and Flora of Valencia Harbour on the West Coast of Ireland. ii. The Medusæ (1895-98). T. c. pp. 694-736, pls. 20 & 21.
21. CARLGREN, O. Ostafrikanische Actinien, gesammelt von Herrn Dr F. Stuhlmann 1898 and 1899. 2 Beiheft Hamburg Anst. xvii, 1899 (1900), pp. 21-144, 7 Taf. and 1 text-fig.
22. —. Ueber die Einwirkung des constanten galvanischen Stromes auf niedere Organismen. Zweite Mittheilung: Versuche an verschiedenen Entwickelungsstadien einiger Evertrebraten. Arch. Physiol. 1900, pp. 465-480.
23. —. Zur Kenntniss der stichodactylinen Actiniarien. Ofv. Ak. Forh. 57, pp. 277-287, 2 figg.
24. —. Über *Pentactinia californica*, n. gen., n. sp. T. c. pp. 1165-1172, 2 figg.
25. \* —. Tafelerklärung der Actiniarien und Zoantharien; in Symbolæ physicæ seu Icones adhuc ineditæ etc. von Hemprich und Ehrenberg; fol. Berolini 1899, G. Reimer.
26. CHUN, C. Aus den Tiefen des Weltmeeres. Jena 1900, pp. 1-549, 6 chromolith., 8 heliograv., 390 figg., 32 plates, 2 maps.
27. \*CURRERI, G. Osservazioni sui Ctenofori comparenti nel porto di Messina. Boll. Soc. zool. Ital. An. ix (Ser. 2) vol. i, Fasc. 3 & 4, pp. 190-193.
28. DRIESCH, H. Von der Allgemeingiltigkeit wissenschaftlicher Aussagen. Kritische Erörterungen. Biol. Centrbl. xx, pp. 16-25.
29. —. Studien über das Regulationsvermögen der Organismen. ii. Quantitative Regulationen bei der Reparation der *Tubularia*. Arch. Entwickelmech. ix, pp. 103-136, 2 figg. and 12 tables.
30. DUBOIS, R. Du cuivre normal dans la série animale (Animaux marins et terrestres). Ann. Soc. Linn. Lyon 1900, pp. 93-97.  
*Anthea cereus*.
31. DUERDEN, J. E. Jamaican Actiniaria. Part ii. *Stichodactylinae* and *Zoonthee*. Tr. Dublin Soc. (n. s.) vii, pp. 133-208, pls. x-xv.
32. —. Order of appearance of the mesenteries and septa in the Madreporaria. Johns Hopkins Univ. Circ. xix, No. 146, pp. 47-52, 12 figg.
33. ELLES, GERTRUDE L. The zonal classification of the Wenlock Shales of the Welsh Borderland. Quart. J. Geol. Soc. 56, pp. 370-414, pl. 24, and text-figg.
34. FOWLER, G. H. The Hydromedusæ and the Scyphomedusæ. Lankester's Treatise on Zoology, Part ii, Chapters iv & v, 81 pp., text-figg.
35. FRANKLIN, C. L. Phosphorescence in deep- Science  
(n. s.) xi, p. 954.

36. \*GANE, H. S. Some Neocene Corals of the United States. *Mus.* xiii, pp. 179-198.
37. GARDINER, J. S. On the anatomy of a supposed new sp *Cænopsammia* from Lifu. *Zool. Results* (Willey), Part iv, p. 380, pl. xxxiv and 2 figg.
38. GEMMILL, J. F. On the vitality of the ova and spermatozoa of animals. *J. Anat. Physiol. norm. path.* xxxiv, pp. 163-181, 6 figg. Reference to the anemone, *Actinoloba dianthus*, p. 180.
39. GILSON, G. Exploration de la Mer sur les côtes de la Belgique. *Mem. Mus. Hist. nat. Belgique* 1900, pp. 1-81, 3 pls. and 10 figg.  
List of Cœlenterata, p. 34.
40. GREGORY, J. W. *Polytremacis* and the Ancestry of the Helic. *P. R. Soc. London* lxi, p. 19 and pp. 291-305, pl. 2.  
*Heliopora* descended from Heliolitidæ by increase in number of chymal cœca and decrease in size.
41. —. The Fossil Corals of Christmas Island. *Monogr. Ch. Id.*, Andrews, pp. 206-225, 8 figg.
42. —. On the West Indian species of *Madrepora*. *Ann. Nat. Hist. N. S.* (7) vi, pp. 20-31.
43. —. Jurassic Fauna of Cutch. The Corals. *Pal. Ind. ser. 2*, Part 2, pp. 1-195, 26 pls. and 4 text-figg.
44. —. On the Geology and Fossil Corals and Echinids of Somaliland. *Quart. J. Geol. Soc.* 56, pp. 26-45, 2 pls., and text-figg.
45. GROSS, J. Zur Anatomie der Lucernariden. *Jena. Zeitschr.* pp. 611-624, Taf. xxiii & xxiv.
46. GÜNTHER, R. T. *Muestra parasites* Krohn. *Rep. Brit. Ass.* 1900, pp. 789 & 790.  
Preliminary account.
47. HÆCKEL, E. *Kunst-Formen der Natur*. Leipzig and Wien. 1899, p. v.
48. HARGITT, C. W. Variation among Hydromedusæ. *P. Amer. Mus. Nat. Hist.* xlix, pp. 203-206.  
Also *Science* (n. s.) xii, pp. 340-342.
49. —. A Review of the problem of Sex Cells in the Hydromedusæ. *P. Amer. Ass.* xlix, p. 240.
50. —. A contribution to the natural history and development of *Pennaria tiarella* McCr. *Amer. Natural.* xxxiv, pp. 387-406, pl. 1 and 2.
51. HARTLAUB, C. Revision der *Sertularella*-Arten. *Abh. Ver. Naturh. Hamburg* xvi, pp. 1-143, 6 pls. and 56 text-figg.  
Recorded from a reprint sent in advance and dated 1900.
52. HEIN, W. Untersuchungen über die Entwicklung von *Aurelia*. *Zeitschr. wiss. Zool.* lxvii, pp. 401-438, Taf. 24 & 25 u. 5 text-figg.
53. HICKSON, S. J. The Medusæ of *Millepora*. *P. R. Soc. London* 1900, pp. 3-10, 10 figg.
54. —. The Alcyonaria and Hydrocorallinæ of the Cape of Good Hope. *Marine Invest. S. Africa*, No. 5, pp. 67-96, 6 pls.
55. — & HILES, I. L. The Stolonifera and Alcyonacea collected by Dr Willey in New Britain, etc. *Zool. Results* (Willey), Part iv, pp. 493-508, pls. 50 & 51.

HILES, I. L. [See HICKSON, S. J. & HILES, I. L.]

56. HOLLICK, A. Some features of the drift on Staten Island, N. Y. Ann. N. York Ac. xii, pp. 91-102, pl. i.  
List of Palæozoic fossils.
57. JOHNSON, J. Y. Notes on the Antipatharian Corals of Madeira with descriptions of a new species and a new variety, and remarks on a specimen from the West Indies in the British Museum. P. Zool. Soc. London 1899, pp. 813-824, figg. i-iii.
58. —. Note on the habit and mode of growth of the corals belonging to the genus *Pleurocorallium*. T. c. pp. 978 & 979.
59. JOLEAUD, —. Le terrain carboniférien dans le sud de l'Algérie. Mem. Ac. Vaucluse xix, pp. 397-402.  
List of Corals.
60. KERVILLE, H. G. DE. Note sur la Faune de la fosse de la Hague (Manche). Bull. Soc. zool. France xxv, pp. 33-37.  
Species of *Sertularia*.
61. —. Description et figuration d'Actiniaires monstrueux de l'espèce *Actinoloba dianthus* (Ellis) par feu l'abbé Dicquemare, du Havre. Bull. Soc. Rouen, 2<sup>de</sup> semestre 1899, pp. 245-250, 1 pl.
62. KISHINOUE, K. Contributions to the Natural History of the Commander Islands. xiii. A new species of Stalked Medusæ, *Hali-clystus stejnegeri*. P. U. S. Mus. xxii, pp. 125-129, 3 figg.
63. LACAZE-DUTHIERS, H. DE. Coralliaires du Golfe du Lion. Alcyonaires. Arch. Zool. exp. (3) viii, pp. 353-462, pla. xi-xv.
64. LANKESTER, E. R. A Treatise on Zoology, Chapter II. The Enterocœla and the Cœlomocœla. London 1900, Pt. II, pp. 1-37, text-figg.  
See also FOWLER, G. H. (34); BOURNE, G. C. (16).
65. LINDSTRÖM, G. On *Thecocyathus nathorsti*, n. sp., a Neocomian coral from King Charles Land. Ofv. Ak. Forh. 57, pp. 5-12, 8 figg.
66. LINKO, A. Über den bau der Augen bei den Hydromedusen. Mem. Ac. St. Petersb. (8) x, No. 3, pp. 1-23, 2 pls.
67. \* —. Observations sur les Méduses de la mer Blanche. Trav. Soc. St. Petersb. xxix, 1899.
68. LONGHI, P. Della pietra da coti o da mola Bellunese e di alcuni suoi fossili. Atti Soc. Veneto-Trent. iii (2) 1897, pp. 41-86.
69. LÖNNBERG, E. Contributions to the biology of the Caspian Sea. Ofv. Ak. Forh. 57, pp. 13-29, *Cordylophora*, p. 26.
70. McMURRICH, J. P. The mesenterial filaments in *Zoanthus sociatus* (Ellis). Tr. Canad. Inst. vi, Dec. 1899, pp. 387-404, 11 figg.
71. MASSAT, E. Méduses fossiles. Naturaliste xxii, pp. 51-53, 3 figg.
72. MAY, W. Die arktische, subarktische und subantarktische Alcyonaceenfauna. Fauna Arctica (Römer u. Schaudinn) Jena, 1900, Bd. I, Lief. 3, pp. 381-408, 5 figg.
73. MAYER, A. G. Descriptions of new and little-known Medusæ from the Western Atlantic. Bull. Mus. Harvard xxxvii, pp. 1-9, 6 pls.
74. —. Some Medusæ from the Tortugas, Florida. T. c. pp. 13-83, 44 pls.
75. MIYAJIMA, M. On a specimen of a *Gigantia* — *Branchiocori-anthus imperator* (Allman), found in xiii, pp. 235-262, pls. 14 & 15, 3 figs

76. MORGAN, T. H. Regeneration: old and new interpretation. Lect. Wood's Holl 1899, Boston 1900, pp. 185-208.
77. MURBACH, L. Fresh Water Aquaria. Amer. Natural. xxxiv -206.  
Freshwater Polyzoa etc.
78. NOETLING, F. The Miocene of Burma. Verh. Ak. An (II sect.) vii, No. 2, 1 map, 130 pp.
79. NUTTING, C. C. American Hydroids. Pt. 1. The Plum pp. 135, pls. 1-34, 4to. Bull. U. S. Mus. Spec. Bull. iv.
80. PARKE, H. H. Variation and Regulation of Abnormalities in Arch. Entwickmech. x, pp. 692-710, 9 figg.
81. PARKER, G. H. Synopses of North-American Invertebrate The Actinaria. Amer. Natural. xxxiv, pp. 747-758, 22 figg.
82. PAULY, R. Untersuchungen über den Bau und die Lebensw *Cordylophora lacustris* Allman. Zool. Anz. xxiii, pp. 546-551. Vorläufige Mittheilung.
83. PAUSINGER, F. v. Bau und Function der Nematophoren von lariden. Arb. Inst. Wien xii, pp. 301-334, Taf. i-iii.
84. PEEBLES, F. Experiments in Regeneration and in grafting of zoa. Arch. Entwickmech. x, pp. 435-488, 82 figg.
85. PICTET, C. et BEDOT, M. Hydraires provenant des Campa l'Hirondelle (1886-1888). Campagnes Scient. (Prince de Fasc. xviii, pp. 1-58, 10 pls.
86. PRATT, EDITH M. Anatomy of *Neohelia porcellana* (Moseley) Results (Wiley), Pt. v, pp. 591-602, pls. 62 & 63.
87. PRENANT, A. Contribution à l'étude des cellules ciliées et ments analogues. Arch. anat. micr. iii, pp. 101-121, pl. v. Urticating cells of *Anemonia sulcata*.
88. PÜTTER, A. Alcyonaceen des Breslauer Museums. Zool. Jahr xiii, pp. 443-462, Taf. 29 & 30.
89. RAND, H. W. The regulation of graft abnormalities in Arch. Entwickmech. ix, pp. 161-214, pls. 5-7.
90. ROULE, L. Description d'une nouvelle espèce méditerranée zoanthide, commensale des Pagures. (*Palythoa (Gemmaria) cola*.) Bull. Soc. zool. France xxv, pp. 120-125, 2 figg.
91. —. Notice sur les Anthozoaires des côtes de la Corse. pp. 125-135.
92. —. Sur les genres *Palythoa* et *Epizoanthus*. C.R. Ac. Sci pp. 279-281.
93. SCHNEIDER, K. C. Mittheilungen über Siphonophoren. v. zellen. Arb. Inst. Wien xii, pp. 133-242, 7 pls.
94. STEWART, C. Descriptive and illustrated catalogue of the logical series of comparative anatomy contained in the Museum Royal College of Surgeons of England. Vol. 1, 2nd Edit. 1900.  
Endoskeleton of Hydrozoa and Anthozoa, pp. 6-12, pls. i-viii.
95. THORNELLY, LAURA R. The Hydroid Zoophytes collected by Dr in the southern seas. Zool. Results (Wiley), Pt. iv, pp. 4 pl. xlv.

TODD, R. A. [See ALLEN & TODD.]

96. VANHÖFFEN, E. Über Tiefseemedusen und ihre Sinnesorgane. Zool. Anz. xxiii, pp. 277-279.
97. VAUGHAN, T. W. A new fossil species of *Caryophyllia* from California, and a new genus and species of Turbinolid Coral from Japan. P. U. S. Mus. xxii, pp. 199-203, 1 pl.
98. —. The Eocene and Lower Oligocene Coral faunas of the United States with descriptions of a few doubtfully cretaceous species. Mon. U. S. Geol. Surv. xxxix, pp. 1-263, 24 pls.
99. —. *Trochocyathus woolmani*, a new coral from the cretaceous of New Jersey. P. Ac. Philad. 1900, pp. 436 & 437, 3 figg.
100. VERRILL, A. E. Additions to the Anthozoa and Hydrozoa of the Bermudas. Tr. Connect. Ac. x, pp. 551-572, pls. 67-69.
101. —. Notes on the geology of the Bermudas. Amer. J. Sci. (4) ix, pp. 313-340, 12 figg.
102. WHITFIELD, R. P. II. Observations on and descriptions of Arctic fossils. Bull. Amer. Mus. xiii, pp. 19-22, pls. 1 & 2.
103. —. List of fossils, types and figured specimens, used in the Palæontological work of R. P. Whitfield, showing where they are probably to be found at the present time. Ann. N. York Ac. xii, pp. 139-186.  
*Cœlenterata*, pp. 144-146.
104. WIEGERS, F. Zur Kenntniss des Diluviums der Umgegend von Lüneburg. Zeitschr. Naturw. Bd. 72, pp. 241-290.  
Includes list of Silurian Corals.
105. WOOD, E. M. R. The Lower Ludlow formation and its Graptolite fauna. Quart. J. Geol. Surv. 56, pp. 415-492, pls. 25 & 26.
106. ZSCHOKKE, F. Die Tierwelt der Hochgebirgsseen. Denk. Schweiz. Ges. 1900, 400 pp., 8 pls., and 4 maps.  
*Hydridæ*, pp. 74-77.

## II. SUBJECT-INDEX.

### COELENTERATA (collectively).

#### GENERAL BIOLOGY.

- Iconography; HÆCKEL, *Kunst-Formen der Natur*.  
 Estuarine Cœlenterata. Fauna of Salcombe Estuary; ALLEN & TODD, J. Mar. Biol. Ass. vi, p. 185.  
 Oceanography; CHUN (26).  
 Pelagic Cœlenterata. Fauna of Valencia Harbour; BROWNE, P. Irish Ac. (3) v, p. 677: other Cœlenterata; BEAUMONT, t. c. p. 766.  
 Endoskeleton of Hydrozoa and Anthozoa; STEWART (94).  
 Galvanotaxis in Cœlenterate larvæ, p. 467; CARLIGREN, Arch. Physiol. 1900.  
 Phosphorescence; FRANKLIN, Science xi (n. s.), p. 954.  
 Phylogeny. Bifurcation of the Metazoan stem into Parasoa (Sponges) and Enterozoa, the latter comprising the two grades Enterocœla and Cœlomocœla; LANKESTER, *Treatise on Zoology*, Pt. II.



## HYDROZOA.

## HYDROIDEA

(including HYDROMEDUSÆ).

## GENERAL BIOLOGY.

Bathymetric Distribution of Hydroids; PICTET et BEDOT, *Cœl. Scient.* (Prince de Monaco) Fasc. xviii, and BONNEVIE, *Norwegian Exp.* 1876-1878, Zool. xxvi.

Bionomics. Influence of freshwater habitat on organisation of *Cordylophora lacustris*. Freshwater colonies smaller, less branched a prolific than the estuarine colonies, p. 548; PAULY, Zool. Anz. xxiii

Conjugation in *Plumularidæ*, p. 44; NUTTING, Bull. U. S. Mus. Bull. iv.

Development. *Pennaria tiarella*; HARGITT, Amer. Natural. p. 387: *Plumularidæ*; NUTTING, Bull. U. S. Mus. Spec. Bull. iv, 42, text-figg. 96-124.

Differenzierungserscheinungen an harmonisch-äquipotentiellen men. *Tubularia*, p. 23; DRIESCH, Biol. Centrbl. xx.

Germ-cells. In *Eudendrium ramosum* and *tenuis* the ova arise in the endoderm while in *E. racemosum* and *dispar* the sexual p occur in both ecto- and endoderm although the primitive mother-every case arise in endoderm and during growth may migrate in ectoderm; HARGITT, P. Amer. Ass. xlix, p. 240.

Histology. *Cordylophora lacustris*, p. 548; PAULY, Zool. Anz. Nematophores of *Plumularidæ*, p. 301; PAUSINGER, Arb. Inst. Wie

*Hydromedusæ*. Structure and Classification; FOWLER (34): *Med Tubularia prolifer* (Agass.): swimming effected by medusæ of generation, p. 29, Taf. 1, fig. 6c. Found among the plankton Christiania Fiord, April 1897; BONNEVIE, *Norwegian N. Atl. Exp.* 1878, Zool. xxvi.

Medusæ, divided into 2 groups:—(a) Littoral (Anthomedusæ and medusæ); (b) Oceanic (Trachomedusæ and Narcomedusæ), p. 695; Br P. Irish Ac. (3) v.

Morphology of the Plumularidæ, pp. 3-35, 95 text-figg.; NUTTING U. S. Mus. Spec. Bull. iv.

Ocelli. Structure of eyes in Hydromedusæ—eight species and genera collected in the White Sea, p. 1; LINKO, Mem. Ac. St. Peter x, No. 3.

Oogenesis. *Parypha crocea*, p. 295; growth of the ovum, p. 296; J C. M., Biol. Bull. i.

Pseudo-cells. Sterile cells of the germinal tissue absorbed t growing ova inside which the nuclei undergo amitotic division, *P. crocea*, p. 301; ALLEN, C. M., t. c.

Regeneration. *Tubularia*, p. 103; DRIESCH, Arch. Entwicklmech *Hydra*; RAND, t. c. p. 161; MORGAN, op. cit. x, pp. 105-108: morph in Hydroidea; MORGAN, Biol. Lectures 1899-1900: Grafting of Hyc p. 435; PEEBLES, Arch. Entwicklmech. x.

Reproduction, stoloniferous in *Plumularidæ*, p. 42; NUTTING, Bull Mus. Spec. Bull. iv.

Segmentation. *Parypha crocea*, p. 303; ALLEN, C. M., Biol. Bull.

Structure and affinity of *Mnestra parasites* Krohn, p. 789; GE'S Rep. Brit. Ass. 1900.

Variation. Radial Canal System of *Dipleurosoma typicum* Boeck, p. 716, pls. xx & xxi; BROWNE, P. Irish Ac. (3) v: Hydromedusæ; HARGITT, P. Amer. Ass. xlix, p. 203: *Pennaria* and *Gonionemus*, p. 340; HARGITT, Science (n. s.) xii: Regulation of Abnormalities in *Hydra*, p. 692; PARKE, Arch. Entwicklmech. x.

## DISTRIBUTION.

Valencia Harbour: Distribution of Medusæ. Table i-iii, p. 736; BROWNE, P. Irish Ac. (3) v.

Atlantic Ocean: Hydroids of Gulf of Gascony and Azores, 31 species of which 3 are new; PICTET et BEDOT, Campagnes Scient. (Prince de Monaco) Fasc. xviii.

N. Atlantic: Hydroids; BONNEVIE, Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.

Western Atlantic: Medusæ, p. 1; MAYER, Bull. Mus. Harvard xxxvii.

America, North, Central and West Indies: Geographical and bathymetrical distribution of Plumularidæ on Atlantic and Pacific Coasts, pp. 49-53; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.

Florida: Medusæ, p. 13; MAYER, Bull. Mus. Harvard xxxvii.

Bermudas: *Hydrozoa*; VERRILL, Tr. Connect. Ac. x, p. 551.

Switzerland: Hydridæ of the mountain lakes; ZSCHOKKE, Denk. Schweiz. Ges. p. 74.

White Sea: Medusæ; LINKO, Trav. Soc. St. Petersb. xxix-4, 1899.

Caspian Sea: Occurrence of *Cordylophora lacustris* Allm., p. 26; LÖNNBERG, Ofv. Ak. Forh. 57.

New Britain etc.: Hydroids; THORNELLY, Zool. Res. (Willey) iv.

Japan, Sagami Sea: *Celenterata*, p. 235; MIYAJIMA, J. Coll. Japan xiii.

*Sertularella*. Distribution, pp. 15 & 52; HARTLAUB, Abh. Ver. Hamburg xvi.

## SYSTEMATIC.

*Aglaphenia bellis*, n. sp., Engineer Group (British New Guinea), p. 456; THORNELLY, Zool. Res. (Willey) iv.

*A. compressa*, p. 94, n. sp.; BONNEVIE, Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.

*A. myriophyllum* L., p. 34; *filicula* Allm., p. 41; *acacia* Allm., p. 44; PICTET et BEDOT, Campagnes Scient. (Prince de Monaco) Fasc. xviii.

*A. flowersi*, p. 93; *elegans*, p. 94; *aperta*, p. 95; *cristifrons*, p. 95; *contorta*, p. 96; *mammillata*, p. 98; *minima*, p. 98; *rathbuni*, p. 101; *latirostris*, p. 101; *octocarpa*, p. 103; *bicornuta*, p. 105, n. spp.; *allmani*, n. n., p. 100; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.

*Aglaphenopsis distans*, p. 119; *verrilli*, p. 120, n. spp.; NUTTING, t. c.

*Antennopsis distans*, p. 73; *longicornis*, p. 74; *nigra*, p. 74, n. spp.; NUTTING, t. c.

*Antennularia americana*, p. 69; *rugosa*, p. 70; *geniculata*, p. 71; *pinnata*, p. 71, n. spp.; NUTTING, t. c.

*Bougainvillia gibbsi*, p. 5; *frondosa*, p. 41, n. spp.; MAYER, Bull. Mus. Harvard xxxvii.

*B. muscus* Allm., New Britain, pl. 44, figg. 2, 2a & 2b, p. 452; THORNELLY, Zool. Res. (Willey) iv.

*Branchioceranthus imperator* (Allman) = *Monoculus imperator* Allm. taken by a long fishing line from 250 fathoms off Misaki, Japan; MIYAJIMA, J. Coll. Japan xiii, p. 235.

*Callicarpa gracilis* Fewkes, p. 86; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.

- Calvinia* n. g. *mirabilis*, n. sp., p. 77; NUTTING, t. c.  
*Campanularia brevithecata*, n. sp., New Britain, pl. 44, figg. 8, t. p. 454; THORNELY, Zool. Res. (Willey) iv.  
*C. armata*, n. sp., p. 9; PICTET et BEDOT, Campagnes Scient. (Pr Monaco) Fasc. xviii.  
*Cladocarpus obliquus*, p. 113, *septatus*, p. 113, *flexuosus*, p. 114, p. 115, *carinatus*, p. 117, n. spp.; NUTTING, Bull. U. S. Mus. Bull. iv.  
*C. sigma* (Allm.), p. 47; PICTET et BEDOT, Campagnes Scient. (Pr Monaco) Fasc. xviii.  
*Cordylophora lacustris* Allm. in the Caspian Sea, p. 26; LÖNNBE Ak. Forh. 57.  
*Corymorpha nana* Alder, p. 22, also table of Norwegian species, BONNEVIE, Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.  
*Coryne brevicornis*; *gigantea*, p. 15, n. spp., included in a t. Norwegian species of *Coryne*; BONNEVIE, t. c.  
*Cryptolaria conferta* Allm., specimens bearing gonosomes of th of *Coppinia*, p. 17; PICTET et BEDOT, Campagnes Scient. (Pr Monaco) Fasc. xviii.  
*Cunocanthia incisa*, n. sp., p. 66; MAYER, Bull. Mus. Harvard xxxv  
*Cytæis gracilis*, n. sp., p. 39; MAYER, t. c.  
*Dictyocladium reticulatum* (Krp.), p. 92; HARTLAUB, Abh. Ver. H. xvi.  
*Dinema floridana*, p. 30; *jeffersoni*, p. 30, n. spp.; MAYER, Bull. Harvard xxxvii.  
*Dipleurosoma typicum* Boeck, p. 715; BROWNE, P. Irish Ac. (3) v.  
*Diptopleron quadricorne*, p. 82, *grande*, p. 82, *longipinna*, p. 83, 1 NUTTING, Bull. U. S. Mus. Spec. Bull. iv.  
*Dipurena fragilis*, p. 28, *picta*, p. 29, n. spp.; MAYER, Bull. Mus. F. xxxvii.  
*Dissonema turrida*, n. sp., p. 44; MAYER, t. c.  
*Dynamena unilateralis*, p. 78, n. sp.; BONNEVIE, Norwegian N. Atl. 1876-1878, Zool. xxvi.  
*Dysmorphosa dubia*, p. 40; *minuta*, p. 41, n. spp.; MAYER, Bull. Harvard xxxvii.  
*Ectopleura minerva*, n. sp., p. 31; MAYER, t. c.  
*E. pacifica*, n. sp., New Britain, pl. 44, figg. 1 & 1a, p. 452; THO Zool. Res. (Willey) iv.  
*Euchelota paradoxica*, n. sp., p. 56; MAYER, Bull. Mus. Harvard x:  
*Eucopium parvigastrium*, n. sp., p. 52; MAYER, t. c.  
*Eutimium serpentinum*, n. sp., p. 58; MAYER, t. c.  
*Gattya humilis* Allman, p. 87; NUTTING, Bull. U. S. Mus. Spec. Bu  
*Gemmaria dichotoma*, n. sp., p. 35; *gemmosa*, Hydroid nov., p. 35; 1 Bull. Mus. Harvard xxxvii.  
*Gonionemoides* n. g. *geophila*, n. sp., p. 62; MAYER, t. c.  
*Gonothyræa longicyatha*, n. sp., New Britain down to 50 fms., pl. 44 & 4a, p. 454; THORNELY, Zool. Res. (Willey) iv.  
*Halecium irregulare*, n. sp., p. 58; BONNEVIE, Norwegian N. Atl. 1876-1878, Zool. xxvi.  
*Halicornaria longicauda*, p. 127; *variabilis*, p. 127, n. spp.; Nt Bull. U. S. Mus. Spec. Bull. iv.  
*Hippurella longicarpa*, n. sp., p. 84; NUTTING, t. c.  
*Hydractinia allmanii*, p. 47, *ornata*, p. 47, *minuta*, p. 48, n. spp.; Bon Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.  
*Hydranthea australis*, n. sp., Blanche Bay, New Britain, down to 4 p. 451; THORNELY, Zool. Res. (Willey) iv.  
*Lafœa dumosa* Fleming, p. 12; PICTET et BEDOT, Campagnes : (Prince de Monaco) Fasc. xviii.

- L. symmetrica*, p. 64, *gigantea*, p. 68, n. spp.; BONNEVIE, Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.
- Lampra sarsii*, p. 18, *atlantica*, p. 21, *purpurea*, p. 21, n. spp.; BONNEVIE, t. c.
- Laodicea neptuna*, n. sp., p. 48; MAYER, Bull. Mus. Harvard xxxvii.
- Lictorella flexilis*, p. 15, n. sp., *halecioides* Allman, var. *annellata*, n. var., p. 17; PICTET et BEDOT, Campagnes Scient. (Prince de Monaco) Fasc. xviii.
- Lizzia elegans*, n. sp., p. 44; MAYER, Bull. Mus. Harvard xxxvii.
- Lymnorea borealis*, n. sp., p. 6; MAYER, t. c.
- Lytocarpus clarkei*, p. 124; *curtus*, p. 125; *furcatus*, p. 125, n. spp.; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.
- Monobrachium parasiticum* Meresch. p. 51; BONNEVIE, Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.
- Monopoma interversa*, n. sp., p. 26; PICTET et BEDOT, Campagnes Scient. (Prince de Monaco) Fasc. xviii.
- Monostachas quadridens* (McCrary), p. 75; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.
- Monotheca* n. g. *margaretta*, n. sp., p. 72; NUTTING, t. c.
- Multioralis* n. g. *ovalis*, n. sp., p. 54; MAYER, Bull. Mus. Harvard xxxvii.
- Myriothela gigantea*, p. 38; *mitra*, p. 38, n. spp.; BONNEVIE, Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.
- Netocertoides* n. g. *brachiatum*, n. sp., p. 45; MAYER, Bull. Mus. Harvard xxxvii.
- Niobia* n. g. *dendrotentacula*, n. sp., p. 36; MAYER, t. c.
- Nuditheca* n. g. type *dalli* (Clark), p. 128; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.
- Obelia linearis*, n. sp., New Britain, pl. 44, fig. 6; *delicatula*, n. sp., New Britain, 40 fms., fig. 7; *serrulata* (Bale) ibid. fig. 5; THORNELY, Zool. Res. (Willey) iv.
- O. nigra*, n. sp., p. 721; BROWNE, P. Irish Ac. (3) v.
- Oceania carolinæ*, p. 7; *discoida*, p. 51; *gelatinosa*, p. 51; *globosa*, p. 51; *magnifica*, p. 50, n. spp.; MAYER, Bull. Mus. Harvard xxxvii.
- Octonema gelatinosa*, n. sp., p. 8; MAYER, t. c.
- Orchistoma tentaculata*, n. sp., p. 8; MAYER, t. c.
- Perisiphonia pectinata* Allm., p. 18; PICTET et BEDOT, Campagnes Scient. (Prince de Monaco) Fasc. xviii.
- Phortia lactea*, n. sp., p. 58; MAYER, Bull. Mus. Harvard xxxvii.
- Plumularia altitheca*, p. 58; *floridana*, p. 59; *alternata*, p. 62; *inermis*, p. 62; *goodei*, p. 64; *corrugata*, p. 64; *palmeri*, p. 65; *virginiae*, p. 66; *profunda*, p. 66; *dendritica*, p. 67; *paucinoda*, p. 68, n. spp.; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.
- P. compacta*, n. sp., New Caledonia, pl. 44, fig. 3, p. 457; THORNELY, Zool. Res. (Willey) iv.
- P. variabilis*, p. 91; *rubra*, p. 91, n. spp.; BONNEVIE, Norwegian N. Atl. Exp. 1876-1878, Zool. xxvi.
- Polyplumularia armata*, n. sp., p. 83; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.
- Polyplumularia flabellata* Sars, p. 28; PICTET et BEDOT, Campagnes Scient. (Prince de Monaco) Fasc. xviii.
- Pseudodytia* n. g. *pentata*, n. sp., p. 53; MAYER, Bull. Mus. Harvard xxxvii.
- Rhacostoma dispar*, n. sp., p. 61; MAYER, t. c.
- Schizotricha dichotoma*, p. 78; *parvula*, p. 79, n. spp.; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.
- Selaginopsis arctica*, p. 87, n. sp.; BONNEVIE, 1876-1878, Zool. xxvi.

- Sertulariella* Gray, 1848, Systematic Monograph of the genus: *S. p.* p. 28, n. sp.; *tropica*, n. n., p. 41; *modesta*, p. 42; *affinis*, p. 43; *flexilis*, p. 44, n. spp.; *monopleura*, n. n., p. 73; *protecta*, p. 74; *passeleri*, p. 80, n. spp.; *allmani*, n. n., p. 81; *antarctica*, n. n., p. 82; *mediterranea*, p. 86, n. spp.; HARTLAUB, Abh. Ver. Hamburg xv. *Sertularia pusilla*, n. sp., Lifu; *littoralis*, n. sp., Lifu, p. 455; THOM Zool. Res. (Willey) iv.
- Stomatoca rugosa* = *S. apicata* Fewkes, p. 4; *australis*, p. 32, n. MAYER, Bull. Mus. Harvard xxxvii.
- Syndictyon angulatum*, n. sp., p. 5; MAYER, t. c.
- Tetracannota* n. g. *collapsea*, n. sp., p. 46; MAYER, t. c.
- Thecocarpus* n. g. *normani*, p. 106; *benedicti*, p. 106, n. spp. Type: *phyllum* (L.), p. 107; NUTTING, Bull. U. S. Mus. Spec. Bull. iv.
- Thursaria articulata* (Pallas), p. 25; PICTET et BEDOT, Campagnes S. (Prince de Monaco) Fasc. xviii.
- Tiara superba*, n. sp., p. 34; MAYER, Bull. Mus. Harvard xxxvii.
- Tiaropsis punctata*, n. sp., p. 49; MAYER, t. c.
- Tubularia variabilis*, p. 26; *cornucopia*, p. 29, n. spp.; BONNEVIE, Norw. N. Atl. Exp. 1876-1878, Zool. xxvi.
- Zygodactyla cubana*, n. sp., p. 60; MAYER, Bull. Mus. Harvard xxxvii.

## HYDROCORALLINA.

### GENERAL BIOLOGY.

Female Medusæ of *Millepora*; HICKSON, P. R. Soc. London lxvi, p.

### DISTRIBUTION.

S. Africa: Hydrocorallinæ of Cape; HICKSON, Marine Invest. S. A. No. 5.

### SYSTEMATIC.

*Allopora nobilis* Sav., Kent, p. 93; HICKSON, Marine Invest. S. A. No. 5.

## SIPHONOPHORA.

### GENERAL BIOLOGY.

Cnidoblasts of Siphonophora, monograph, p. 133; SCHNEIDER, Arb. Wien xii.

### DISTRIBUTION.

Tortugas, Florida; MAYER, Bull. Mus. Harvard xxxvii.

### SYSTEMATIC.

*Agalma viridis*, n. sp., p. 80; MAYER, Bull. Mus. Harvard xxxvii.

*Chunia* n. g. *capillaria*, n. sp., p. 78; MAYER, t. c.

*Diphyopsis hispaniana*, n. sp., p. 76; MAYER, t. c.

*Erysa hispaniana*, n. sp., p. 77; MAYER, t. c.

## †GRAPTOLITHIDA.

## DISTRIBUTION.

Wales: Graptolites of the Wenlock Shales, p. 370; ELLES, Quart. J. Geol. Soc. 56.

## SYSTEMATIC.

- Cyrtograptus carruthersi* Lapw. = (!) *Monograptus nilsoni* (Barr.), p. 408; ELLES, Quart. J. Geol. Soc. 56.  
*Cyrtograptus symmetricus*, p. 410, and 376, n. sp.; ELLES, t. c.  
*Monograptus flexilis*, p. 405; *irfonensis*, p. 407, n. spp.; *testis* var. *inornatus*, n. var., p. 408; ELLES, t. c.  
*M. colonus* var. *compactus*, n. var., p. 466; *varians*, n. sp., p. 467, var. *pumilus*, n. var., p. 469; *leintwardinensis* Lapw. var. *incipiens*, n. var., p. 475; *uncinatus* var. *orbatus*, n. var., p. 476; *crinitus*, n. sp., p. 480; Wood, t. c.  
*M. vulgaris*, p. 455; *tumescens*, p. 458; *comis*, p. 459, n. spp.; Wood, t. c.  
*Retiolites spinosus*, n. sp., p. 485; Wood, t. c.

## CTENOPHORA.

## GENERAL BIOLOGY.

*Ctenophora*: Structure and Classification. *Cæloplana metschnikowii* Kow. figured on p. 18; BOURNE (17).

## DISTRIBUTION.

- Messina: Ctenophores of the harbour; CURRERI, Boll. Soc. zool. Ital. An. ix, Ser. 2, Vol. 1, Fasc. 3 & 4, p. 180.  
 Western Atlantic: New species of *Mnemiopsis*; MAYER, Bull. Mus. Harvard xxxvii.

## SYSTEMATIC.

*Mnemiopsis mc'cradyi*, n. sp., p. 9; MAYER, Bull. Mus. Harvard xxxvii.

## SCYPHOZOA.

## GENERAL BIOLOGY.

- Anatomy and development of *Cassiopea xamachama*, p. 191; BIGELOW, Mem. Boston Soc. v.  
 Anatomy: Lucernaridæ; GROSS, Jena. Zeitschr. 33, pp. 611-624.  
 Development: *Blastula*, *Gastrula*, *Planula* and *Scyphula* of *Aurelia aurita*; HEIN, Zeitschr. wiss. Zool. lxvii, p. 401.  
 Natural History of *Haliclystus*; BLACKBURN, Tr. Manchester Micr. Soc. 1900, p. 59.  
*Scyphomedusæ*: Structure and Classification; FOWLER (34).  
 Sense-organs: Rhopalia of *Atolla* and *Periphylla*, pp. 278 & 279; VANHÖFFEN, Zool. Anz. xxiii.

## DISTRIBUTION.

Valencia Harbour: Stauromedusæ; BEAUMONT, P. Irish Ac. (3) v.

Western Atlantic: Scyphomedusa *Bathyluca solaris*, n. g. et sp. MAYER, Bull. Mus. Harvard xxxvii.

Jamaica: Cubomedusæ; BERGER, Mem. Johns Hopkins Univ. iv, p. 1.

Bathymetrical distribution: *Atolla*, *Periphylla* and *Periphyllopsis*, deep sea Medusæ never occurring at a less depth than 600 metres, p. 275. VANHÖFFEN, Zool. Anz. xxiii.

North Pacific. *Halicystus stejnegeri*, n. sp. from Bering Island—measuring 18 mm. in height and 18 mm. in diameter; KISHINOYE, P. U. S. Mus. xxii, p. 125.

## SYSTEMATIC.

*Atolla chuni, valdiviæ*, n. spp., p. 277; VANHÖFFEN, Zool. Anz. xxiii.

*Aurelia habanensis*, n. sp., p. 69; MAYER, Bull. Mus. Harvard xxxvii.

*Bathyluca*, n. g. *solaris*, n. sp., p. 2; MAYER, t. c.

*Charybdea aurifera*, n. sp., p. 70; MAYER, t. c.

*Halicystus auricula* (Rathke), p. 806; BEAUMONT, P. Irish Ac. (3) v.

*H. stejnegeri*, n. sp., p. 126, Bering Island; KISHINOYE, P. U. S. Mus. xxii.

*Lucernaria*, unnamed, n. sp., p. 811; BEAUMONT, P. Irish Ac. (3) v.

*Periphyllopsis*, n. g., p. 278, VANHÖFFEN, Zool. Anz. xxiii.

†*Rhizostomites*. Fossil Medusæ, p. 51; MASSAT, Naturaliste xxii.

## ANTHOZOA.

## GENERAL BIOLOGY and DISTRIBUTION.

## Classification of Class Anthozoa.

Sub-Class I. *Alcyonaria*.Grade A. *Protalcyonacea*.Grade B. *Synalcyonacea* n.Order 1. *Stolonifera*.„ 2. *Alcyonacea*.„ 3. *Pseudaxonia*.„ 4. *Axifera*.„ 5. *Stelechotokea* n.„ 6. *Cœnothecalia* n.Sub-Class II. *Zoantharia*.Grade A. *Paramera* n.Order 1. *Cerianthidea*.„ 2. *Antipathidea*.„ 3. *Zoanthidea*.„ 4. *Edwardsiidea*.„ 5. *Proactinia*.Grade B. *Cryptoparamera* n.Order 6. *Actiniidea*.Sub-order 1. *Malacactiniæ* n.„ 2. *Scleractiniæ* n. (= Madrepোরaria); BOURNE (16).

Corsica. Anthozoa; ROULE, Bull. Soc. zool. France xxv, p. 125.

## ALCYONARIA.

## GENERAL BIOLOGY.

Anatomy: *Tubipora*, *Clavularia*, *Telesto*; HICKSON & HILES, Zool. Res. (Willey) iv: *Xeniidae*; ASHWORTH, t. c.

Ancestry of *Heliopora*; GREGORY, P. R. Soc. London lxvi, pp. 19 and 291.

Gonads. In *Tubipora musica* ♂, young sperm sacs in their follicles were found on the 6 ventral mesenteries only as described by VON KOCH; in *Clavularia viridis* ♀ the ovisacs were attached to all 6 of the ventral mesenteries below the ventral mesenterial filaments; hermaphroditism of very rare occurrence in Alcyonarians; HICKSON & HILES, Zool. Res. (Willey) iv.

*Xeniidae*, ovisacs and sperm sacs on the edges of the ventral and lateral mesenteries of the larger polyps; *Xenia viridis* a protandric hermaphrodite, p. 517; ASHWORTH, t. c.

Growth of *Pleurocorallium* at Madeira; JOHNSON, P. Zool. Soc. London 1899, pp. 978 & 979.

Monograph: Alcyonaria of the Golfe du Lion; LACAZE-DUTHIERS, Arch. Zool. exp. (3) viii, p. 353.

## DISTRIBUTION.

Arctic: Arctic and subarctic Alcyonacea comprising 9 species of Clavulariidae (6 of *Clavularia* and 3 of *Sympodium*), 1 *Organidus*, 5 Alcyonidae, 34 Nephthyidae all placed in the genus *Paraspongodes* of which 3 new; there are no circumpolar species; bathymetrical distribution, p. 405; MAY, Fauna Arctica.

Antarctic: Subantarctic Alcyonacea, comprising 9 species, 2 Clavulariidae and 7 Alcyonidae; MAY, t. c.

Mediterranean: Alcyonaria of the Golfe du Lion; LACAZE-DUTHIERS, Arch. Zool. exp. (3) viii, p. 353.

Bermudas: Alcyonaria, p. 568; VERRILL, Tr. Connect. Ac. x.

Oriental Region: Alcyonacea of the China Sea and Japan; PÜTTER, Zool. Jahrb. Syst. xiii.

New Britain etc.: Alcyonacea; HICKSON & HILES, Zool. Res. (Willey) iv: *Xeniidae*; ASHWORTH, t. c.

New Guinea: *Stolonifera*; HICKSON & HILES, t. c.

S. Africa: Alcyonaria of Cape; HICKSON, Marine Invest. S. Africa, No. 5.

*Alcyonium* at Cullercoats; BRADY, Nat. Hist. Tr. Northumb. xiii, p. 442.

## SYSTEMATIC.

*Acrophytum*, n. g. *claviger*, n. sp., p. 74; HICKSON, Marine Invest. S. Africa, No. 5.

*Alcyonium glomeratum* Hassall, New Britain, p. 503, previously recorded from coasts of Great Britain and Norway; *macropodium*, n. sp., New Britain, pl. 50, figg. 8-10, p. 504; HICKSON & HILES, Zool. Res. (Willey) iv.

*Ammothea*, said to be a spurious genus to be merged with *Nephthys*: the name moreover preoccupied by a Pycnogonid, p. 41

HILES, t. c.



- A. rubriflora*, China Sea, p. 451, n. sp.; PÜTTER, Zool. Jahrb. Syst. : *Bellonella rigida*, Japan, p. 448, n. sp.; PÜTTER, t. c.  
*Cavernularia elegans* (Herklots), p. 89; HICKSON, Marine Invest. S. No. 5.  
*Clavularia viridis* Q. and G. from D'Entrecasteaux Group (British Guinea), p. 494, pl. 51, figg. 13 & 14; HICKSON & HILES, Zool. (Willey) iv.  
*Eleutherobia*, n. g. *japonica*, Japan, p. 449, n. sp.; PÜTTER, Zool. Syst. xiii.  
*Eunicea grandis*, n. sp., p. 570; VERRILL, Tr. Connect. Ac. x.  
*Fascicularia* Viguier, p. 452; LACAZE-DUTHIERS, Arch. Zool. exp. (3) *Gorgonia capensis*, n. sp., p. 83; HICKSON, Marine Invest. S. Africa, *Haimeia* M. E., genus of doubtful autonomy, p. 454; LACAZE-DUTHIERS, Arch. Zool. exp. (3) viii.  
† *Heliopora somaliensis*, n. sp. from the Cretaceous of Somaliland, p. GREGORY, P. R. Soc. London lxi.  
*Heteroxenia capensis*, p. 70, n. sp.; HICKSON, Marine Invest. S. No. 5.  
*Juncella elongata* (Pall.), p. 85; HICKSON, t. c.  
*Lobularia* Sav. a spurious genus as maintained by KLUNZINGER, p. HICKSON & HILES, Zool. Res. (Willey) iv.  
*Melitodes dichotoma* (Pall.) p. 80; HICKSON, Marine Invest. S. No. 5.  
*Nephtya virescens* (Sav.) = *Ammothea virescens* Sav. Description, p. HICKSON & HILES, Zool. Res. (Willey) iv.  
† *Ocotremacia*, n. g., type *Polysolenia hochstetteri* v. Reuss from Mioc Java, p. 302; GREGORY, P. R. Soc. London lxi.  
*Organidus*, spurious genus; *O. nordenskjöldi* Daniellsen = *Bellonella a* (Dan.) sp. juv. The family *Organineæ* also falls; PÜTTER, Zool. J. Syst. xiii, pp. 444 & 446.  
*Paralcyonium* M. E. Note, p. 451; LACAZE-DUTHIERS, Arch. Zool. (3) viii.  
*Paraspongodes caduca*, p. 394, *uviformis*, p. 395, *globosa*, p. 400, n. MAY, Fauna Arctica.  
† *Polytremacia septifera*, n. sp., a Helioporid from the Turonian of G p. 301; GREGORY, P. R. Soc. London lxi.  
*Rolandia coralloides*, n. sp., Gulf of Lyons, p. 424, LACAZE-DUTHIERS, Arch. Zool. exp. (3) viii.  
*Sarcophytum trochiforme*, n. sp., p. 77; HICKSON, Marine Invest. S. A No. 5.  
*Spongioderma verrucosum* Möb., p. 78, HICKSON, t. c.  
*Spongodes mucronata*, p. 454, *sinensis*, p. 455, *candida*, p. 456, *fol* p. 458, *microspiculata*, p. 459, China Sea, n. spp.; PÜTTER, Jahrb. Syst. xiii.  
*S. semperi* Studer, Lifu, 30 fms., pl. 50, figg. 5-7, p. 499; *rukaiyae*, 1 New Britain, 3-4 fms., pl. 51, fig. 11, p. 499; HICKSON & H Zool. Res. (Willey) iv.  
*Symphodium coralloides*, p. 369; LACAZE-DUTHIERS, Arch. Zool. exp. viii.  
*Telesto rupicola* Müller, 50 fms., pl. 50, figg. 1 & 2; *arthuri*, n. sp., 30 pl. 50, figg. 3 & 4, and pl. 51, fig. 12, New Britain; HICKSON & H Zool. Res. (Willey) iv.  
*Tubipora musica* L. a multifacial species like *Millepora alaicornis*; I SON & HILES, t. c.  
*Xenia crassa* Schenk, New Caledonia, p. 510; *membranacea* Schenk, Britain, p. 512; *umbellata* Sav., New Britain, p. 513; *viridis* Sc New Caledonia; *novæ britannicæ*, n. sp., p. 518; tabular synopsis of *Xenia*, p. 524; ASHWORTH, t. c.

## ANTIPATHARIA.

## DISTRIBUTION.

Madeira: Antipatharian faunule comprising 8 species; JOHNSON, P. Zool. Soc. London 1899, p. 813.

## SYSTEMATIC.

*Antipathella gracilis* (Gray), p. 819, *brookii*, n. sp., p. 821; JOHNSON, P. Zool. Soc. London 1899.

*Antipathes furcata* Gray, p. 819, JOHNSON, t. c.

*Aphanipathes wollastoni* Brook, p. 821, var. *pilosa*, n. var., p. 822, JOHNSON, t. c.

*Leiopathes glaberrima* (Esper) M.-Edw., p. 817, *expansa*, n. sp., p. 817; JOHNSON, t. c.

*Savaglia* (= *Gerardia*) *lamurcki* (Haimé), p. 814; JOHNSON, t. c.

*Stichopathes gracilis* (Gray) p. 815, *setacea* (Gray) p. 816; JOHNSON, t. c.

## ACTINIARIA.

## GENERAL BIOLOGY.

Anatomy and histology of Jamaican Actiniaria; DUERDEN, Tr. Dublin Soc. (n. s.) vii, p. 133.

Development of *Urticina* (*Tealia*) *crassicornis* (O. F. M.) and *Actinia equina* L., p. 1; APPELLÖF, Bergens Mus. Aarbog 1900, No. 1.

Environment: Localities for Actinians—East Africa, p. 133; CARLGREN, 2 Beiheft Hamburg Anst. xvii.

Histology: Urticating cells of *Anemonia sulcata*; PRENANT, Arch. anat. micr. iii, pp. 101-121, pl. v.

Phylogeny: Phylogenetic Classification of the Actiniaria into 2 Tribes *Protantheæ* and *Nynantheæ* based upon the substitution for a peripheral ectodermal retractor apparatus of a more central mesenterial retractor apparatus. The Scyphistoma has nothing to do with the primitive Anthozoan promorph; CARLGREN, 2 Beiheft Hamburg Anst. xvii, pp. 29-33.

Physiochemistry: Traces of copper in *Anthea cereus* etc.; DUBOIS, Ann. Soc. Linn. Lyon 1900, pp. 93-97.

Teratology: Monstrous specimens of *Actinoloba dianthus*; DE KERVILLE, Bull. Soc. Rouen 1899 (1900), p. 245.

## DISTRIBUTION.

Bermudas: *Actiniaria*, p. 554; VERRILL, Tr. Connect. Ac. x.

Jamaica: *Actiniaria*, p. 133; DUERDEN, Tr. Dublin Soc. (n. s.) vii.

North America: Synopsis of *Actiniaria*, p. 747; PARKER, Amer. Natural. xxxiv.

Ethiopian Province: Description of 42 species of East African Actinzoa including 1 Cerianthid, 32 Actinians and 9 Zoanthids; CARLGREN, 2 Beiheft Hamburg Anst. xvii.

## SYSTEMATIC.

- Actinia mesembryanthemum* H. & Ehr. = *Paractis hemprichi* (K. Iactinia hemprichi (Flunz.) Carlg.; CARLGREN, 2 Beiheft H Anst. xvii, p. 53.
- Actinodendron hansingorum*, n. sp., p. 118, Taf. ii, fig. 12, Z CARLGREN, t. c.
- Actinoides sultana*, p. 63, Taf. i, figg. 12 & 13; *africana*, p. 64, Z n. spp.; CARLGREN, t. c.
- Actinoporus elongatus*, n. sp., p. 283; CARLGREN, Ofv. Ak. Forh. 57
- Actinotryx sancti-thomæ* (Duch. et Mich.), p. 555, pl. 68, fig. 5; V Tr. Connect. Ac. x.
- Alicia sansibarensis*, n. sp., p. 48, Taf. i, figg. 6 & 7, Zanzibar, sandy ground; CARLGREN, 2 Beiheft Hamburg Anst. xvii.
- Anemonia manyano*, n. sp., p. 61, Taf. i, figg. 14 & 15, Zanzibar; GREN, t. c.
- Antheopsis koseirensis* (Klunz.) Simon, p. 105 Taf. ii, figg. 17 Zanzibar; CARLGREN, t. c.
- Aureliania regalis* Andres, description, p. 280; CARLGREN, Ofv. AI 57.
- Bolocerooides mcmurrici* (Kwietn.), p. 36, Taf. i, figg. 10 & 11 and figg. 15 & 16; *hermaphroditica*, n. sp., differing from type in hermaphrodite, p. 38, both from Zanzibar; CARLGREN, 2 Hamburg Anst. xvii.
- Bunodeopsis globulifera*, n. sp., p. 559; VERRILL, Tr. Connect. Ac. 1
- Bunodes waridi*, n. sp., p. 66, Taf. i, fig. 17, Zanzibar; CARLGREN, 2 Hamburg Anst. xvii.
- Calliactis polypus* (Forsk.) Klunz., p. 75, Taf. i, figg. 3 & 4, Z CARLGREN, t. c.
- Corynactis globulifera* (Ehr.), p. 40, text-fig. 1, Zanzibar; CARLGREN
- Discosoma yuma*, p. 83, Taf. ii, figg. 14 & 15; *unguja*, p. 84, Taf. ii, 9, Zanzibar, n. spp.; CARLGREN, t. c.
- Edwardsia*, differentiated from *Gonactinia*: CARLGREN, t. c. p. 34.
- Edwardsiella pudica* (Klunz.), p. 46, Taf. i, fig. 5, Zanzibar; CAR t. c.
- Gyrostoma tristis*, p. 56, Taf. i, figg. 1 & 2; *dubia*, p. 58; *stuhlmanni* Taf. i, fig. 16, Zanzibar, n. spp.; CARLGREN, t. c.
- Helianthopsis mabrucki*, n. sp., p. 102, Taf. ii, fig. 21, Taf. iv, figg. Zanzibar; CARLGREN, t. c.
- Heteranthida*, nov. fam., p. 92; CARLGREN, t. c.
- Heterodactyla hemprichii* Ehr., p. 114, Taf. iv, figg. 7-10, Zanzibar; GREN, t. c.
- Heterodactylinae*, n. s.-o., p. 138; DUERDEN, Tr. Dublin Soc. (n. s.) v
- Homodactylinae*, n. s.-o., p. 154; DUERDEN, t. c.
- Homostichanthida*, nov. fam., p. 138; CARLGREN, 2 Beiheft Ha Anst. xvii.
- Homostichanthus*, n. g., p. 166, type *H. anemone* (Ellis); DU Tr. Dublin Soc. (n. s.) vii.
- Homostichanthus duerdeni*, n. n. for *H. anemone*, p. 137; CAR 2 Beiheft Hamburg Anst. xvii.
- Iactinia*, n. g. *badia*, n. sp., East Africa, p. 53; CARLGREN, t. c.
- Isodwardsia*, n. g. differentiated from *Edwardsiella* but no co diagnosis nor type species, p. 46; CARLGREN, t. c.
- Isophellia*, n. g. *sabulosa*, n. sp., p. 72, taf. i, figg. 8 & 9, Z CARLGREN, t. c.
- Paradiscosoma*, n. n. for *Isaura*, type *P. neglecta* (Duch. & Mich.), CARLGREN, t. c.

- Pentactinia*, n. g. *californica*, n. sp., p. 1166; CARLGREN, Ofv. Ak. Forh. 57.  
*Phellia rufa*, n. sp., p. 557; VERRILL, Tr. Connect. Ac. x.  
*P. decora* (H. & Ehr.), Klunz., p. 70, Taf. iii., figg. 5 & 6, Zanzibar; CARLGREN, 2 Beiheft Hamburg Anst. xvii.  
*Phymanthus sansibaricus*, p. 87, Taf. ii, figg. 13, 19, 20, Taf. iv, fig. 18; *strandeni*, p. 88, Taf. ii, figg. 4 & 5, Zanzibar, n. spp.; *loligo* (Ehr.) M.-E. & H., p. 90, Taf. ii, figg. 2 & 3, Taf. iv, fig. 17, Zanzibar; CARLGREN, t. c.  
*Stichodactylinae*, Sub-tribus of *Actiniuria-Nynanthæe*, comprising 7 families of which 2, *Heteranthidæ* and *Stoichactidæ* are new, p. 77; CARLGREN, t. c.  
*Stoichactidæ*, nov. fam., p. 92; CARLGREN, t. c.  
*Stoichactis tapetum* (Ehr.) Carlgr., p. 94, Taf. ii, figg. 10 & 11; *giganteum* (Forsk.) Carlgr., p. 97, Zanzibar, CARLGREN, t. c.  
*Thalassianthus aster* Leuck., p. 107, Taf. ii, fig. 16, Taf. iv, figg. 1-6; *kraepelini*, n. sp., p. 111, Taf. ii, fig. 1, Taf. iv, figg. 11-13, Zanzibar; CARLGREN, t. c.

## CERIANTHARIA.

### SYSTEMATIC.

- Cerianthus maúa*, n. sp., Zanzibar; CARLGREN, 2 Beiheft Hamburg Anst. xvii, p. 27, Taf. iii, fig. 3.

## ZOANTHARIA.

### GENERAL BIOLOGY.

- Commensalism of *Polythoa* and *Epizoanthus* with Pagurines, p. 279; ROULE, C.R. Ac. Sci. cxxxi.  
 Mesenterial filaments in *Zoanthus sociatus* (Ellis); McMURRICH, Tr. Canad. Inst. vi, p. 387.

### DISTRIBUTION.

- Bermudas: *Zoanthidæ*, p. 560; VERRILL, Tr. Connect. Ac. x.  
 East Africa; CARLGREN, 2 Beiheft Hamburg Anst. xvii.

### SYSTEMATIC.

- Epizoanthus*, genus rejiciendum, p. 279; ROULE, C.R. Ac. Sci. cxxxi.  
*Gemmuria tubulifera*, p. 126, Taf. v, fig. 2, vi, fig. 33, Tumbatu; *multisulcata*, p. 127, Taf. iii, fig. 1, v, fig. 3, vi, figg. 1 & 5, Zanzibar; *aspera*, p. 129, Taf. v, fig. 1, vi, fig. 2, Baui, n. spp.; CARLGREN, 2 Beiheft Hamburg Anst. xvii.  
*Isaurus spongiosus* (Andr.) Haddon, p. 124, Taf. v, fig. 6, Baui; CARLGREN, t. c.  
*Polythoa tropica*, p. 130, *sansibarica*, p. 131, *incerta*, p. 133, all figured, East Africa, n. spp.; CARLGREN, t. c.  
*P. grandiflora*, n. sp., p. 564; VERRILL, Tr. Connect.  
*P. paguricola*, n. sp., coast of Corsica 50-120  
 C.R. Ac. Sci. cxxxi, also Bull. Soc. zool. F.

1900. [VOL. XXXVII.]

- Parazoanthus tunicans*, p. 193, *separatus*, p. 197, *monostichus*, p. 202, n. spp.; DUERDEN, Tr. Dublin Soc. (n. s.) vii.  
*Protopalythoa*, n. n., type *Gemmaria variabilis* Duer., p. 562; *grandis*, n. sp., p. 563; VERRILL, Tr. Connect. Ac. x.  
*Zoanthus proteus*, n. sp., p. 561; VERRILL, t. c.  
*Z. sansibaricus*, p. 121, Taf. iii, fig. 4, v, fig. 7, vii, figg. 1 & 3; *stuhlmanni*, p. 123, Taf. v, fig. 8, vii, fig. 4, Zanzibar, n. spp.; CARLGREN, 2 Beiheft Hamburg Anst. xvii.

## MADREPORARIA.

## GENERAL BIOLOGY.

- Anatomy, histology and affinities of *Neohelia porcellana* (Moseley), p. 591; PRATT, Zool. Results (Willey), pt. v.  
 Anatomy and Histology. *Ctenopsammia*; GARDINER, op. cit. pt. iv.  
 Coral Reefs; AGASSIZ, Amer. J. Sci. (4) ix; VERRILL, t. c.  
 Geology, p. 1; ANDREWS, Bull. Mus. Harvard xxxviii.  
 Coral Skeleton. Nomenclature and Taxonomic Value, p. 4; GREGORY, Pal. Ind. (ser. ix) pt. ii.  
 Mesenteries and Septa of Madreporaria, their order of appearance; DUERDEN, Johns Hopkins Univ. Circ. xix, No. 146, p. 47.  
 Structure of *Porites*, p. 487; BERNARD, J. Linn. Soc. xxvii.  
*Seriatopora* galls caused by *Hapalocarcinus marsupialis* Stimpson, described and figured; COLMAN, W. G. Brachyura from Torres Straits. Tr. Linn. Soc. London (2) viii, p. 45 and pl. 3, figg. 38-40.

## DISTRIBUTION.

- Bermudas. *Madreporaria*, p. 551; VERRILL, Tr. Connect. Ac. x.  
 West Indies. Species of *Madrepora*; GREGORY, Ann. Nat. Hist. (7) vi.  
 Christmas Island. Fossil Corals; GREGORY, Monogr. Christmas Id. Andrews.  
 Madreporaria, p. 119; BERNARD, P. Zool. Soc. London 1900.  
 +California, San Pedro. *Caryophyllia* from the Pleistocene; VAUGHAN, P. U. S. Mus. xxii, p. 199.  
 +United States. Neocene corals, p. 179; GANE, P. U. S. Mus. xxii.  
 +Tertiary Corals, p. 1; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 +King Charles Land. A Neocomian Coral, p. 5; LINDSTRÖM, Ofv. Ak. Forh. 57.  
 +Somaliland. Fossil Corals, p. 26; GREGORY, Quart. J. Geol. Soc. 56.  
 +Cutch. Jurassic Corals, p. 1; GREGORY, Pal. Ind. (ser. ix), ii, Pt. 2.  
 +Burmah. Miocene Corals; NOETLING, Verh. Ak. Amsterdam (II Sect.) vii, No. 2.  
 +Japan, East Coast. *Turbinolida*; VAUGHAN, P. U. S. Mus. xxii, p. 200.

## SYSTEMATIC.

- +*Acanthastræa patula* (Dana) var. *paucidentata*, n. v., p. 218; GREGORY, Monogr. Christmas Id. Andrews.  
 +*Aldrichia* n. g., p. 70, *elegans*, n. sp., p. 71; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 +*Amphiastrea piriformis*, n. sp., p. 71; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.

- † *Amphihelia natchitochensis*, n. sp., p. 124; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Anabacia acaulis*, p. 175, *fungiformis*, p. 176, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Anisocenina murrayi*, p. 220, *favoidea*, p. 220, n. spp.; GREGORY, Monogr. Christmas Id. Andrews.
- † *Archæoseris* n. g., p. 153, *thamnastroides*, n. sp., p. 153; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Astrangia expansa*, p. 133, *ludoviciana*, p. 135, *harrisi*, p. 136, *wilcoxensis*, p. 137, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Astrocenia bernensis* var. *indica* n. var., p. 62; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- A. pumpellyi*, p. 149, n. sp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- Astrocenidae* nov. nom., p. 149; VAUGHAN, t. c.
- † *Astrohelia neglecta*, p. 114, *burnsi*, p. 115, n. spp.; VAUGHAN, t. c.
- † *Balanophyllia elongata*, n. sp., p. 164 & 175, *desmophyllum* var. *microcostata* n. var., p. 166, *irrorata* var. *coniformis* n. var., p. 170, *inauris*, p. 171, *ponderosa*, p. 173, *annularis*, p. 174, *augustinensis*, p. 174, n. spp., *caulifera* var. *multigranosa* n. var., p. 177; VAUGHAN, t. c.
- † *Calamophyllia aylmeri*, n. sp., p. 31; GREGORY, Quart. J. Geol. Soc. 56.
- † *Caryophyllia arnoldi*, n. sp., p. 199; VAUGHAN, P. U. S. Mus. xxii.
- † *C. dalli*, p. 110, *texana*, p. 111, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Centrastræa kobyi*, n. sp., p. 145; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Ceratotrochus alcockianus*, n. sp., from Miocene of Burmah, not diagnosed, pp. 25 & 44; NOETLING, Verh. Ak. Amsterdam (II Sect.) vii, No. 2.
- † *Celohelia* n. g., p. 125, *wagneriana*, p. 127, n. sp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Celoria andrewsi*, n. sp., p. 212; GREGORY, Monogr. Christmas Id. Andrews.
- † *Celosamilia indica*, n. sp., p. 40; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- Cænopsammia willeyi*, n. sp., Lifu; GARDINER, Zool. Results (Willey) Pt. iv, p. 357.
- † *Columnastræa bicoronata*, p. 32, *phillipsiæ*, p. 33, *maxima*, p. 34, n. spp.; GREGORY, Quart. J. Geol. Soc. 56.
- † *Comoseris jumarense*, n. sp., p. 157, *jumarense radiata*, n. subsp., p. 157, *jumarense irregularis*, n. subsp., p. 158, *discontinua*, p. 159, *plana*, p. 160, *microphyllioides*, p. 161, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Complexastræa kachensis*, p. 120, n. sp.; GREGORY, t. c.
- † *Coscinaræa andrewsi*, n. sp., p. 221; GREGORY, Monogr. Christmas Id. Andrews.
- † *Cyclolites phillipsiæ*, n. sp., p. 36; GREGORY, Quart. J. Geol. Soc. 56.
- † *Dendrophyllia striata*, *lisbonensis*, p. 191, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Dichocenina alabamensis*, p. 139, n. sp.; VAUGHAN, t. c.
- † *Dimorpharæa stellans*, p. 189, *distincta*, p. 190, *continua*, p. 191, *orbica*, p. 191, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Dimorphustrea sigillum*, p. 139, n. sp.; GREGORY, t. c.
- † *Endopachys maclearii* var. *tenue*, n. var., p. 188, *lonsdalei*, p. 189, *shaleri*, p. 190, *minutum*, p. 190, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Ethmotidae* nov. fam., p. 161; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Eupsammia conradi* n. n., p. 183; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Favia baryphyllioides*, n. sp., p. 69; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *F. merriami*, p. 142, n. sp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *F. somaliensis*, p. 35, n. sp.; GREGORY, Quart. J. Geol. Soc. 56.

- † *Flabellum conoideum*, p. 56, *johnsoni*, p. 59, *lerchi*, p. 59, *mortoni*, p. 66, *californicum*, p. 69, *rhomboides*, p. 69, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *F. conoideum* var. *matthewense* n. var., p. 58, *cuneiforme* var. *acutiforme* n. var., p. 63, *cuneiforme* var. *fragile* n. var., p. 63, *cuneiforme* var. *magnocostatum* n. var., p. 65; VAUGHAN, t. c.
- † *F. intermedium* Mich. Turin, pp. 78 & 82; LONGHI, Atti Soc. Veneto-Trent. iii, 1897.
- † *Frechia* n. g., p. 167, *cornutiformis*, p. 168, n. sp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Genabacia kachensis*, p. 177, n. sp.; GREGORY, t. c.
- Goniastrea auricularis*, n. sp., p. 124; BERNARD, P. Zool. Soc. London 1900.
- † *Goniocora turbinata*, n. sp., p. 43; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Haimesiastrea* n. g., p. 143, *conferta*, p. 145, n. sp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Isastrea hemispherica*, p. 127, *exserta*, p. 128, *parva*, p. 129, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Isastrocena* n. g., p. 130, *kachensis*, n. sp., p. 131; GREGORY, t. c.
- † *Kobyia* n. g. p. 169, *crassolamellosa*, p. 170, *cancellata*, p. 171, *lenticulata*, p. 172, n. spp.; GREGORY, t. c.
- † *Latimæandra humilis*, n. sp., p. 152; GREGORY, t. c.
- † *Levipalifer* n. g., p. 200, *orientalis*, n. sp., p. 201; VAUGHAN, P. U. S. Mus. xxii.
- † *Litharæa cola*, p. 37, *parkinsoni*, p. 37, n. spp.; GREGORY, Quart. J. Geol. Soc. 56.
- † *Lophosmilia tenuicaulata*, n. sp., p. 37; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *Madracis ganei*, p. 128, *johnsoni*, p. 129, *gregorioi*, p. 130, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- Madrepora muricata*, *prolifera cervicornis*, *palmata*, p. 20, West Indies; GREGORY, Ann. Nat. Hist. (7) vi.
- Madrepora (Isopora) brooki*, p. 120, n. sp.; BERNARD, P. Zool. Soc. London 1900.
- † *Mæandrina equisepta*, n. sp., p. 212; GREGORY, Monogr. Christmas Id. Andrews.
- † *Mesomorpha duncani*, p. 159, n. sp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Metethmos* n. g., p. 165, *blanfordi*, p. 165, *griesbachi*, p. 166, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *M. asymmetrica*, n. sp., p. 36; GREGORY, Quart. J. Geol. Soc. 56.
- † *Microsolena variolata*, p. 184, *subturbinata*, p. 183, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- Montipora spongilla*, *parasitica*, p. 122, n. spp.; BERNARD, P. Zool. Soc. London 1900.
- † *Montlivaltia paleta*, p. 84, *cornutiformis*, p. 85, *frustriformis*, p. 98, *chariensis*, p. 97, *kachensis*, p. 106, *culullus*, p. 111, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.
- † *M. cornutiformis*, *typica*, *crassa*, *spissiradata*, *obliquata*, *cordata*, *elliptica*, *vasiformis*, pp. 86-97. Table of Variations, GREGORY, t. c.
- † *Oculina singleyi*, p. 120, *alabamensis*, p. 121, *harrisi*, p. 122, *aldrichi*, p. 123, *smithi*, p. 123, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.
- † *Orbicella murrayi*, n. sp., p. 215, *quadrangularis* var. *columnata* n. v., p. 217, *preheliopora*, n. sp., p. 217; GREGORY, Monogr. Christmas Id. Andrews.
- † *Paracynthus alternatus*, p. 105, *granulosus*, p. 107, *bellus*, p. 108, *rugosus*, p. 109, *cylindricus*, p. 109, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.

- †*Parasmilia ludoviciana*, n. sp., p. 113; VAUGHAN, t. c.  
 †*Placosmilia kachensis*, p. 76, *cæliformis*, p. 77, *scalpiformis*, p. 76, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Platycenia* n. g., p. 150, *jacksonensis*, p. 150, n. sp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
*Plenastrea goodii*, n. sp., p. 553; VERRILL, Tr. Connect. Ac. x.  
 †*Porites belli*, n. sp., p. 223; GREGORY, Monogr. Christmas Id. Andrews.  
 †*Prionastrea crassisepta*, n. sp., p. 34; GREGORY, Quart. J. Geol. Soc. 56.  
 †*Protethmos* n. g., p. 162, *oldhami*, p. 164, *duncani*, p. 164, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Rhectopsammia* n. g., p. 183, *claibornensis*, n. sp., p. 184; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 †*Sematethmos* n. g., p. 168, *sinuosa*, p. 169, n. sp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Siderastrea hexagonalis*, p. 155, n. sp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 †*Sphenotrochus claibornensis*, p. 85, n. sp.; VAUGHAN, t. c.  
 †*Stephanocenia fairbanksi*, p. 151, n. sp.; VAUGHAN, t. c.  
 †*S. magna*, n. sp., p. 65; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Stephanomorpha* n. g., p. 156, *monticuliformis*, p. 157; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 †*Steriphonotrochus* n. g., p. 112, *pulcher*, n. sp., p. 113; VAUGHAN, t. c.  
 †*Stibastrea structa*, p. 147, *pænninsula*, p. 148, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Stylina kachensis*, n. sp., p. 56; GREGORY, t. c.  
 †*S. subtabulata*, n. sp., p. 31; GREGORY, Quart. J. Geol. Soc. 56.  
 †*Stylophora minutissima*, p. 131, *ponderosa*, p. 132, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 †*S. frondosa*, n. sp., p. 30; GREGORY, Quart. J. Geol. Soc. 56.  
 †*Stylosmilia trapeziformis*, n. sp., p. 47; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Thamnaræa amorphæa*, p. 194, *tuberosa*, p. 195, n. spp.; GREGORY, t. c.  
 †*Thamnastræa crateriformis*, p. 135, n. sp., *mayeri* Koby var. *indica*, n. var. *valpinensis* Koby var. *kuchensis*, n. var., p. 137; GREGORY, t. c.  
 †*Thecocyathus nathorsti*, n. sp., p. 5; LINDSTRÖM, Ofv. Ak. Forh. 57.  
 †*Tricycloseris triangularis*, p. 186, *patelliformis*, p. 187, n. spp.; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Trocharæa patelliformis*, p. 178, n. sp.; GREGORY, t. c.  
 †*Trochocyathus hyatti*, p. 93, n. sp., *lunulitiformis* var. *montgomeriensis* n. var., p. 94, *californianus*, p. 96, *depressus*, p. 97, *stantoni*, p. 98, *cingulatus*, p. 99, n. spp.; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 †*T. woolmani*, n. sp., p. 436; VAUGHAN, P. Ac. Philad. 1900.  
 †*Trochoplegma* n. g., p. 179, *tenuilamellosa*, n. sp., p. 180; GREGORY, Pal. Ind. (ser. ix.) ii, Pt. 2.  
 †*Trochasmilia indica*, n. sp., p. 80; GREGORY, t. c.  
 †*Turbinacis* n. g. *erythræensis*, n. sp., p. 39; GREGORY, Quart. J. Geol. Soc. 56.  
 †*Turbinaria* (?) *alabamensis*, n. sp., p. 194; VAUGHAN, Mon. U. S. Geol. Surv. xxxix.  
 †*Turbinolia wautubbenensis*, p. 88, *claibornensis*, p. 90, *insignifica*, p. 91, n. spp.; VAUGHAN, t. c.

†*RUGOSA*.

## DISTRIBUTION.

Carboniferous corals of Algeria; JOLEAUD, Mem. Ac. Vaucluse xix, p. 397.



+*TABULATA.*

INCERTÆ SEDIS.

DISTRIBUTION.

†Arctic fossil corals; WHITFIELD, Bull. Amer. Mus. xiii, p. 19.

SYSTEMATIC.

†*Calapæcia borealis*, n. sp., p. 20; WHITFIELD, Bull. Amer. Mus. xiii.

†*Halysites agglomeratiformis*, n. sp., p. 20; WHITFIELD, t. c.

†*Heliolites perelegans*, n. sp., p. 21; WHITFIELD, t. c.

†*Receptaculites pearyi*, n. sp., p. 19; WHITFIELD, t. c.

# XVII. SPONGIÆ.

BY

PROFESSOR E. A. MINCHIN.

## CONTENTS.

	Page
INTRODUCTION . . . . .	4
Corrigenda in Record for 1899 . . . . .	6
I. TITLES . . . . .	6
II. BIOLOGY.	
A. Evolution . . . . .	13
(i) General Principles . . . . .	13
(ii) Relations of Sponges . . . . .	13
(iii) Phylogeny . . . . .	14
B. Morphology . . . . .	14
(i) General Accounts . . . . .	14
(ii) External Characters . . . . .	14
(a) Attachment . . . . .	14
(b) Form and Mode of Growth . . . . .	14
(c) Colour . . . . .	14
(d) Consistence, Texture, Smell, etc. . . . .	15
(iii) Anatomy of Soft Parts. Canal System . . . . .	15
(iv) Skeletal System . . . . .	15
(a) General Accounts . . . . .	15
(b) Material of the Skeleton . . . . .	15
(c) Skeletal Elements, Morphology and Development of . . . . .	16
(d) Skeletal Anatomy . . . . .	17
(v) Histology . . . . .	17
(a) General Accounts . . . . .	17
(b) Special Organs or Tissues . . . . .	17
(vi) The Germ Layer Question . . . . .	17
C. Physiology . . . . .	18
(i) General Accounts . . . . .	18
(ii) Nutrition . . . . .	18

(iii)	Respiration . . . . .	
(iv)	Secretion and Excretion, Pigments, Ferments, etc.	
(v)	Irritability, Contractility, etc. . . . .	
(vi)	Individuality . . . . .	
(vii)	Miscellanea and Experimental . . . . .	
D.	Bionomics . . . . .	
(i)	General Accounts . . . . .	
(ii)	Special Habits . . . . .	
(iii)	Habitat . . . . .	
(iv)	Defence and Protection . . . . .	
(v)	Enemies . . . . .	
(vi)	Commensals and Parasites . . . . .	
(vii)	Sponges as Geological Agents . . . . .	
E.	Reproduction and Development . . . . .	
(i)	Germ Cells, Fertilization . . . . .	
(ii)	Embryology . . . . .	
(a)	General Accounts . . . . .	
(b)	Early Stages, Larvæ, and Metamorphosis . . . . .	
(c)	Organogeny . . . . .	
(iii)	Asexual Reproduction . . . . .	
(a)	Fission and Vegetative Budding . . . . .	
(b)	Germinal Budding and Gemmule Formation . . . . .	
F.	Miscellanea . . . . .	
(i)	Technique . . . . .	
(ii)	Economics . . . . .	
(iii)	Bibliography . . . . .	
(iv)	History . . . . .	

## III. DISTRIBUTION.

A.	Geographical . . . . .	
a.	Marine . . . . .	
(i)	General . . . . .	
(ii)	Atlantic Ocean and Adjacent Seas . . . . .	
(iii)	Indian Ocean and Adjacent Seas . . . . .	
(iv)	Pacific Ocean and Adjacent Seas . . . . .	
(v)	Arctic Seas . . . . .	
(vi)	Antarctic Seas . . . . .	
β.	Freshwater . . . . .	
(i)	Europe . . . . .	
(ii)	Asia . . . . .	
(iii)	Africa . . . . .	
(iv)	Australian Region . . . . .	
(v)	America . . . . .	
B.	Geological . . . . .	
(i)	General . . . . .	
(ii)	Cainozoic . . . . .	
(a)	General . . . . .	
(b)	Pleistocene . . . . .	
(c)	Pliocene . . . . .	

# CONTENTS.

*Spong.* 3

	Page
(d) Miocene . . . . .	22
(e) Oligocene . . . . .	22
(f) Eocene . . . . .	22
(iii) Mesozoic . . . . .	22
(a) General . . . . .	22
(b) Cretaceous . . . . .	22
(c) Jurassic . . . . .	22
(d) Lias . . . . .	22
(e) Trias . . . . .	22
(iv) Palæozoic . . . . .	22
(a) General . . . . .	22
(b) Permian . . . . .	22
(c) Permo-Carboniferous . . . . .	22
(d) Coal Measures . . . . .	22
(e) Lower Carboniferous . . . . .	22
(f) Devonian . . . . .	23
(g) Silurian . . . . .	23
(h) Ordovician . . . . .	23
(k) Cambrian . . . . .	23
(l) Pre-Cambrian . . . . .	23
 IV. SYSTEMATIC.	
A. Porifera, general . . . . .	23
B. Calcareæ (including <i>Astroscleridæ</i> ) . . . . .	23
(i) Homocœla . . . . .	23
(ii) Heterocœla . . . . .	24
C. Hexactinellida . . . . .	26
(i) Lyssacina . . . . .	27
(ii) Dictyonina . . . . .	34
D. Demospongiæ . . . . .	37
(i) Tetraxonida . . . . .	37
(a) Carnosa . . . . .	37
(b) Tetractinellida . . . . .	38
(1) Choristida . . . . .	38
(2) Lithistida . . . . .	40
(ii) Monaxonida . . . . .	43
(a) Hadromerina . . . . .	43
(1) Aciculina . . . . .	43
(2) Clavulina . . . . .	44
(b) <i>Halichondrina</i> . . . . .	49
(iii) Keratosa . . . . .	53
(a) Dictyoceratina . . . . .	53
(b) Dendroceratina . . . . .	54
(iv) Myxospongida . . . . .	54
E. Octactinellida . . . . .	54
F. Heteractinellida . . . . .	54
G. Incertæ Sedis . . . . .	54

## INTRODUCTION.

I. The number of publications dealing with sponges recorded this year reaches the large total of 84, exclusive of reviews or abstracts. Of this number, however, about 16 were published previously to the year 1900, but after deducting these, the balance is still a heavy one for a single year. The list includes many publications of great interest in almost all branches of investigation.

II. Biology. MAAS (39) furnishes for the first time the much needed demonstration of what had become, for theoretical reasons, an almost certain proposition, namely that the flat epithelium lining the gastral cavity of the Sycons is not of "endodermal" origin, i.e. derived by flattening out of collar cells of the gastral layer, but arises from ingrowths of the dermal layer, while the gastral layer furnishes collar cells only. The author was further able to make some remarkable observations on the formation of spicules in these forms. SCHULZE (63) publishes the full account of his important observations on the histology of Hexactinellids, of which a preliminary account was recorded last year. It has been the author's good fortune to be the first who has had properly preserved material of these sponges in his hands, so that he has been in a position to give us a detailed description of their collar cells, hitherto unknown. TOPSENT (69, 70) maintains his remarkable statements that in *Clionida* the incurrent and excurrent canals are in direct continuity, and not by way of the chambers as usually believed. He asserts that the chambers have no prosopyles, but are simply blind diverticula of the excurrent canals. As a proof of these propositions he points out that the pieces of calcareous matter cast out by the sponge in the process of its excavations are too large to pass through any prosopyles if they existed, and must travel direct from the incurrent to the excurrent system. But is it certain that the calcareous corpuscles, detached by the *Cliona* in so mysterious a fashion, pass first into the incurrent system? If so, this arrangement of the canal system is perhaps to be regarded as a special peculiarity of boring sponges, an adaptation to their mode of life. The observations of EVANS (15) on the formation of the gemmule of *Ephydatia*, are a remarkable contribution not only to our knowledge of the *Spongilina*, but also to the general biology of the cell. The scleroblasts which form the amphidiscs of the outer coat do so at some distance from their definitive position, which they attain by active migration, like so many ants, carrying their spicules with them. Original observations on the development and histology of Ascons will be found in MINCHIN (46, 47). Under physiology we have an important contribution to the subject of nutrition by ZEMLITSCHKA (81), and observations on pigments from MACMUNN (45), and TOPSENT (70).

III. Under the head of Geographical Distribution the most noteworthy feature is perhaps the contributions to our knowledge of Pacific sponge faunas by KIESCHNICK (26), KIRKPATRICK (27, 28), SCHULZ (60) and THIELE (68). TOPSENT (70) continues his valuable monograph of the sponges of the coasts of France by a description of the Hadromerina, and LAMBE (32) gives a list, complete to date, of sponges known from the coasts of Canada and Alaska. The only addition to our British Fauna is made by WALLER (72) who describes a new species, but since the author announces that "he intends to go no farther than Dr Bowerbank" in matters of classification and taxonomy, it is by no means improbable that this n. sp. may prove to be a synonym. The complete list of Hexactinellids from the Indian Ocean, worked out by Schulze, is given by ALCOCK (1). New freshwater sponges are described by EVANS (15) and MACKAY

(44), and WELTNER (74) gives an account of the Spongilline fauna of the Australian region.

Under the head of Palæontology, the most formidable contribution is the great monograph of the *Dictyospongiada*, with its imposing array of new subfamilies, genera, and species, and its revolutionary system of nomenclature, by HALL & CLARKE (20), published in 1898, but not seen by any previous recorder. Lists of Cretaceous sponges of Gt. Britain are given by JUKES-BROWNE & HILL (25) and by ROWE (55); of Bohemia by ZAHÁLKA (78, 79); of the Silurian of Scotland by PEACH & HORNE (50). Other important palæontological works are those of HINDE (22), ROTHPLETZ (52, 53), and SCHRAMMEN (57).

IV. The most sensational novelty of this or of recent years is the remarkable form *Astrosclera*, discovered by Willey and described by LISTER (38), which, with a skeleton reported to consist of aragonite, and, in any case, composed of elements of most unusual form, is perhaps the representative of a new primary division of the sponges, though here placed, for convenience' sake, under the Calcareae.

MINCHIN (47, p. 111) made the suggestion that many fossil Pharetrone sponges would prove on further investigation to belong to the section Lithonina, hitherto only represented by the recent *Petrostroma schulzei* of Döderlein. Scarcely was the ink dry with which this prophecy was written, before a paper was published by HINDE (22, 23) describing several fossil genera, some new, some old, which were shown to be true Lithonina. In quick succession appeared a memoir by KIRKPATRICK (28) in which a species belonging to one of Hinde's new genera, *Plectroninia*, was described amongst a collection of recent sponges from Funafuti. Thus our knowledge of the Lithonina has advanced by very rapid strides during the past year. New Calcareae are also described by LAMBE (29, 31). Of Hexactinellids SCHULZE (61, 62, 63, 65) describes forms new and old from the Mediterranean, Red Sea, Arctic Ocean and Indian Ocean. Reference has already been made to the memoir of HALL & CLARKE (20), as an addition to our knowledge of fossil Hexactinellids, and to the works of KIESCHNICK (26), KIRKPATRICK (27, 28), LAMBE (31), SCHULZ (60), THIELE (68) and TOPSENT (70), for many additions to the systematic study of Demospongiæ. The following table is a summary of the new genera, species, etc., recorded below:—

	New genera	Altered generic names	New species	New varieties
Calcareae	2+2†		11+6†	
Hexactinellida	5+21†	3†	11+80†	1†
Demospongiæ				
(1) Tetraxonida	2†		27+8†	
(2) Monaxonida	1		46	3
(3) Keratosa	1†		5+ 1†	
Incertæ Sedis			1†	
Total	8+26†	3†	100+96†	3+ 1†

Under the Myxospongiada, Octactinellida, and Heteractinellida, there is nothing new to record.

Finally under the head of general treatises attention may be drawn to MINCHIN (47) and ZITTEL (82).

† Extinct forms.

## CORRIGENDA in Record of Spongiæ for 1899.

- p. 2. BEEDE (2) incorrectly cited; see (4) of present Record.
- p. 3. HALL & CLARKE (18) incorrectly cited; see (20) of present Record.  
 LISTER (23) was published in 1900; see (37) of present Record.
- p. 12. Under "Fossil Sponges"; "*Somospongia*" should be *Somphospongia* (vide p. 25 infra); "*Shelleya*" should be *Stolleya* (vide p. 39 infra); "*Cephalorhaphidites*" should be *Cephaloraphidites* (vide p. 40 infra).

## TITLES\*.

1. ALCOCK, A. W. A summary of the Deep-Sea Zoological work of the Royal Indian Marine Survey Ship *Investigator* from 1884 to 1897. Reprinted from Scientific Memoirs by Medical Officers of the Army of India, Part XI; Calcutta, 1899. [III, A, a, iii.]
  2. ANON. *Lubomirskia baicalensis*. Annuaire Mus. St. Petersb. 1899, No. 4 (1900), Notes Occasionelles, p. xv. [IV, d, ii, b.]
  3. BARLOW, A. E. Report on the Geology and the natural resources of the area included by the Nipissing and Temiscaming Map Sheets, comprising portions of the District of Nipissing, Ontario, and of the County of Pontiac, Quebec. Rep. Geol. Surv. Canada (n. s.) x, 1897 (1899), Report I, 302 pp. [III, B, iv, h.]
  4. BEEDE, J. W. New Fossils from the Kansas Coal Measures. Kansas quart. viii, pp. 123-130 (No. 3, July, 1899), pls. xxxii & xxxiii. [III, B, iv, d. IV, B, ii.]
  5. BOWNOCKER, J. A. The Palæontology and Stratigraphy of the Corniferous Rocks of Ohio. Bull. Denison Univ. xi, Article II, pp. 11-40, pls. ii-viii (May, 1898). [III, B, iv, f.]
  6. BURHENNE, H. Beitrag zur Kenntniss der Fauna der Tentaculiten-schiefer im Lahngebiet, mit besonderer Berücksichtigung der Schiefer von Leun unweit Braunfels. Abh. Preuss. geol. Landesanst. N. F. Heft 29, 1899, 56 pp., 5 pls., with explanations. [III, B, iv, f.]
- CALKINS, G. N. See DELAGE & HEROUARD.
7. CARLGREN, O. Ueber die Einwirkung des constanten galvanischen Stromes auf niedere Organismen. Zweite Mittheilung; Versuche an verschiedenen Entwicklungsstadien einiger Evertrebraten. Arch. Physiol. 1900, Heft v & vi (July, 1900), pp. 465-480.  
 Review by R. PEARL in Amer. Natural. xxxiv, No. 408 (Dec. 1900), pp. 977-979. [II, c, vii.]
  8. CHUN, C. Aus den Tiefen des Weltmeeres. Jena (Gustav Fischer), 1900, 549 pp.  
 General account of deep sea sponges, with numerous figures, pp. 475-479. [IV, c, i, ii.]

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

The Symbols in [ ] refer to the divisions of the Subject-Index II, III, IV. Those referring to the Systematic portion, IV, A-O, are inserted only when some question of definite importance to the systematist is dealt with in the work.

9. CLARKE, J. M. A Sphinctozoan Calcsponge from the Upper Carboniferous of Eastern Nebraska. *Amer. Geol.* xx, No. 6 (Dec. 1897), pp. 387-392, pl. xxiii. [III, B, iv, d. IV, B, ii.]  
 —. See HALL & CLARKE (20).
10. CONANT, F. S. Notes on zoological collecting in Jamaica, W. I. Johns Hopkins Univ. Circ. xix, pp. 23-25 (No. 143, March, 1900). With chart in the text.  
 Occurrence of purple, green, red, brown, black, white, and yellow sponges, not further identified. [II, D, vi.]
11. DATTA, P. N. Notes on the Geology of the Country along the Mandalay-Kunlon Ferry Railway Route, Upper Burmah. General Report of the work carried on by the Geol. Survey of India for the period from the 1st of April 1899 to the 31st March 1900. Calcutta, 1900.  
 Fossil sponges observed, not identified, pp. 101 & 102.  
 DELAGE, Y. (17) & (18), *Zool. Rec.* 1898: Abstract by HÉROUARD in *Annee biol.* iv, 1898 (1900), pp. 317 & 318.  
 — & HÉROUARD, E. (8) *Zool. Rec.* 1899; Review by LENDENFELD, *Zool. Centrbl.* vii, pp. 350 & 351 (May, 1900); Review by A. W[ILLEY] in *Nature* lxii, pp. 122-124; Review by GARY N. CALKINS, *Science*, xi, pp. 390, 391 (March, 1900).
12. DUERDEN, J. E. Jamaica Fisheries. The Operation in Jamaica of the Caribbean Sea Fisheries Development Syndicate, Ltd. *J. Inst. Jamaica* ii, No. 6, pp. 608-614.  
 Occurrence of sponges, p. 613: "a large, black, massive, almost spherical form," very abundant; not further identified. [II, D, vi.]
13. DYBOWSKI, B. Parę słów dotyczących słownictwa zoologicznego polskiego. *Kosmos polski, Rocznik* xxv, Zeszyt vii-ix, 1900, pp. 438-449. [II, A, ii.]  
 EASTMAN, C. R. See ZITTEL (82).
14. ETHERIDGE, R. & DUN, W. S. On the structure and mode of preservation of *Receptaculites australis*, Salter. *Rec. Geol. Survey N. S. Wales* vi, Part I (1898), pp. 62-75, pls. viii, ix. [II, B, iv, b, d: D, vii. IV, c, i.]
15. EVANS, R. A Description of *Ephydatia blembingia*, with an account of the formation and structure of the gemmule. *Quart. J. Micr. Sci.* (n. s.) 44, Part 1, pp. 71-109, pls. 1-4 (Nov. 1900). [II, B, iii; iv, c: D, vi: E, iii, b: F, i, iv. III, A, B, ii. IV, D, ii, b.]  
 —. (9) *Zool. Rec.* 1899; Abstract by LENDENFELD in *Zool. Centrbl.* vii, p. 873 (Dec. 1900).  
 —. (10) *Zool. Rec.* 1899; Review by MAAS, *Zool. Centrbl.* vii, pp. 351-357 (May, 1900). Notice by F. S. SCALES in *Amer. Micr. J.* xxi, No. 5 (May, 1900), pp. 137 & 138.
16. FIELDER, W. Summer days at Flinders. Part I. A collection of Sponges. *Victorian Natural.* xvii, No. 4 (Aug. 1900), pp. 63-74, pl. i. [II, B, i. III, A, a, iv.]
17. —. An Australian collection of Sponges. *Amer. Micr. J.* 21, No. 12 (Dec. 1900), pp. 327-342, 1 pl. [Reprint of (16).]
18. FUGGER, E. Das Salzburger Vorleser-Heft 2, 1899, pp. 287-428, pls. x<sup>th</sup> -



GEORGE, R. D. See SCHUCHERT (59).

19. GILSON, G. Exploration de la Mer sur les Cotes de la Belgique en 1899. *Mem. Mus. Hist. Nat. Belgique* i, 1900, pp. 1-81, pls. i-iii. [III, A, a, ii.]
20. HALL, J. & CLARKE, J. M. A Memoir on the Palæozoic Reticulate Sponges constituting the Family Dictyospongidae. *Mem. N. York Mus. Memoir* ii, New York and Albany, 1898, 350 pp., 70 pls.  
Reviews by G. J. H[INDE], *Geol. Mag.* (3) vii (May, 1900), pp. 230-232; by C. SCHUCHERT in *Science* xi, pp. 391 & 392 (March, 1900); Notice by "W." p. 69, and Review and Abstract by "J. B." pp. 224-228, *Amer. J. Sci.* ix (No. 49, Jan. 1900, and No. 51, March, 1900). [II, B, i; ii, a, b; iv, c, d: c, vi: D, iii; vi. III, B, iv, e, f, g. IV, c, i.]
21. HEMPEL, C. E. Süßwasserschwämme (Spongillen) bei Chemnitz. *Ber. Ges. Chemnitz*, 14, pp. lxi-lxiii, 1900. [III, A, β, i.]  
HÉROUARD, E. See DELAGE, DELAGE & HÉROUARD, and PERRIER.  
HILL, W. See JUKES-BROWNE & HILL (25).
22. HINDE, G. J. On some remarkable Calcisponges from the Eocene Strata of Victoria (Australia). With remarks by SOLLAS. *Quart. J. Geol. Soc.* (Feb. 1900), lvi, pp. 50-66, pls. iii-v.  
Abstract by LENDENFELD, *Zool. Centrbl.* vii, pp. 920 & 921 (Dec. 1900). [II, A, i: B, iii; iv, d. III, B, ii, f. IV, B, ii.]
23. —. On some Remarkable Calcisponges from the Eocene Tertiary Strata of Victoria (Australia). *Geol. Mag.* (3) vii, 1900, pp. 41 & 42; *Ann. Nat. Hist.* (7) v, p. 479. [Report of No. 22.]  
— See also HALL & CLARKE (20).  
HORNE, J. See PEACH & HORNE (50).  
HOVEY, E. O. See WHITFIELD & HOVEY (76).
24. HUTTON, F. W. Early life on the earth. Presidential Address, Section C, Geology and Mineralogy. *Rep. Austral. Ass.* vii, Sydney, 1898 (1899), pp. 340-356. [II, A, iii. III, B, iv, a.]
25. JUKES-BROWNE, A. J. & HILL, W. The Cretaceous Rocks of Britain. Vol. I. The Gault and Greensand. *Mem. Geol. Surv. U. K.* 1900, 499 pp. [III, B, iii, b.]
26. KIESCHNICK, O. Kieselschwämme von Amboina. *Semon's Zoologische Forschungsreisen in Australien und dem Malayischen Archipel. Bd v, Lief v.* *Denk. Ges. Jena, Bd viii*, pp. 545-582, pls. xlv & xlv and descriptions. [II, A, iii. III, A, a, iv. IV, D, i, b, 1; ii, a, 1, 2, b.]
27. KIRKPATRICK, R. On the Sponges of Christmas Island. *P. Zool. Soc. London* (Feb. 20, 1900), pp. 127-141, pls. xii & xiii.  
Abstract by LENDENFELD, *Zool. Centrbl.* vii, p. 922 (Dec. 1900). [III, A, a, iv. IV, B, i; ii: D, i, a, b, 1; ii, a, b; iii, a.]
28. —. Description of Sponges from Funafuti. *Ann. Nat. Hist.* (7) vi (Oct. 1900), pp. 345-362, pls. xiii-xv.  
Abstract by LENDENFELD in *Zool. Centrbl.* vii, p. 921 (Dec. 1900). [III, A, a, iv. IV, B, i, ii: D, i, a, b, 1; ii, a, 2, b; iii, a.]
29. LAMBE, L. M. Description of a new species of Calcareous Sponge from Vancouver Island, B. C. *Ottawa Natural.* xiii, No. 11 (Feb. 1900), pp. 261-263, pl. vi. [In the reprints of this paper the type has been moved up, so as to make the pagination 261-262.] [III, A, a, iv. IV, B, ii.]

30. [LAMBE, L. M.] Notes on Hudson Bay Sponges. Ottawa Natural. xiii, No. 12 (March, 1900), pp. 277-279. [III, A, a, ii. IV, D, i, b.]
31. —. Sponges from the Coasts of North-eastern Canada and Greenland. Tr. R. Soc. Canada vi, Sec. iv, 1900, pp. 19-50, pls. i-vi. [III, A, a, ii. IV, B, i; ii: D, i, b, 1; ii, a, b.]
32. —. Catalogue of the Recent Marine Sponges of Canada and Alaska. Ottawa Natural. xiv, No. 9 (Dec. 1900), pp. 153-172. [III, A, a, ii; iv.]
33. LANKESTER, E. RAY. The Enterocœla and the Coelomocœla; in a Treatise on Zoology, edited by E. Ray Lankester, Part II, Chapter 2, 37 pp., with 17 figg., London, A. & C. Black, 1900. [II, A, ii.]  
 LENDENFELD, R. v. See DELAGE & HÉROUARD, EVANS, HINDE (22), KIRKPATRICK (27 & 28), LISTER (38), MACMUNN (45), SCHULZ (60), SCHULZE, TOPSENT (70), and WELTNER (74).
34. LERICHE, —. Notice sur les Fossiles sparnaciens de la Belgique, et en particulier sur ceux rencontrés dans un récent forage à Ostende. Ann. Soc. geol. Nord xxviii, 1899 (published Feb. 1900), pp. 280-284. Abstract (with incorrect reference) in Bull. Soc. Belge Geol. xiv, fasc. ii (July, 1900), pp. 55 & 56. [III, B, ii, f.]
35. LEVANDER, K. M. Materialien zur Kenntniss der Wasserfauna in der Umgebung von Helsingfors, mit besonderer Berücksichtigung der Meeresfauna. III. Spongien, Cölenteraten, Bryozoen und Mollusken des finnischen Meerbusens bei Helsingfors. Acta Soc. Faun. Fenn. xvii, 1898-1899, Article 4, pp. 1-23 (sep. pag.). [III, A, B, i.]
36. —. Zur Kenntniss der Fauna und Flora finnischer Binnenseen. T. c. xix, No. 2 (Feb. 1900), 55 pp. [III, A, B, i.]
37. LISTER, J. J. The Skeleton of *Astrosclera* compared with that of the Pharetronid Sponges. P. Cambridge Soc. x, Part iv, Michaelmas Term, 1899 (published 16 Jan. 1900), pp. 189, 190. Abstract in J. R. Micr. Soc. 1900, p. 334. [(23) Zool. Rec. 1899.]
38. —. *Astrosclera willeyana*, the Type of a new Family of Sponges. A. Willey's Zoological Results, Cambridge University Press, Part iv, pp. 459-482, pls. xlv-xlvi, 3 text-figg. (April, 1900). Abstracts in Ann. Nat. Hist. (7) vi, pp. 246 & 247; by LENDENFELD in Zool. Centrbl. vii, p. 922 (Dec. 1900). [II, B, iii; iv, b, c, d; v, a, b: E, ii, b: F, i. III, A, a, iv. IV, B, ii.]  
 LOISEL, G. (35) Zool. Rec. 1898; Abstract by A. PRENANT in Année biol. iv, 1898 (1900), pp. 61 & 185.
39. MAAS, O. Die Weiterentwicklung der Syconen nach der Metamorphose. Zeitschr. wiss. Zool. lxvii, Heft 2 (April, 1900), pp. 215-240, pls. ix-xii. Abstracts in J. R. Micr. Soc. 1900, p. 472; by the Author, Zool. Centrbl. vii, pp. 420-422 (June, 1900); by SCHÖEDEL in Zeitschr. wiss. Mikr. xvii, Heft 3 (Dec. 1900), pp. 346 & 347. [II, B, iv, c: E, ii, b, c: F, i.]
40. —. Ueber die sogen. Biokrystalle und die Skeletbildungen niederer Thiere. SB. Ges. München xvi, 1900, Heft i, pp. 42-45 (June, 1900). [II, B, iv, c.]
41. —. Eine neue zusammenfassende Darstellung der Schwämme. Biol. Centrbl., Bd xx, Nr. 23:24 (15 Dec. 1900), pp. 789-792. A review of MINCHIN (47).
42. —. Demonstration von Präparaten über Schwammentwicklung. Verh. Ges. deutsch. Naturf. 71 (17-23 Sept. 1899); Zweiter Theil, i Heft, p. 232 (Title only).

43. [MAAS, O.] Porifera. Zool. Jahresber. 1899 [1900], pp. 1-8 (sep. pag.). Titles of 23 Memoirs, and more or less brief abstracts of them.  
— See EVANS (15).
44. MAC KAY, A. H. A Fresh-water Sponge from Sable Island. P. Nova-Scotian Inst. x, Part ii (Dec. 1900), pp. 319-322, 1 text-fig. [III, A, B, v. IV, D, ii, b.]
45. MACMUNN, C. A. On Spongioporphyrin; the Pigment of *Suberites wilsoni*. Quart. J. Micr. Sci. (n. s.) 43, No. 170 (April, 1900), pp. 337-349, pl. 16, and two charts.  
Abstract in J. R. Micr. Soc. 1900, p. 472. Abstract by LENDENFELD in Zool. Centrbl. vii, pp. 922 & 923 (Dec. 1900). [II, c, iv.]
46. MINCHIN, E. A. Éponges Calcaires. La Clathrine coriacee, *Clathrina coriacea* (Montagu). Zoologie Descriptive des Invertébrés, Paris, 1900 (published 1899), Tome i, Chap. v, pp. 107-147, figg. 35-52. [II, B, ii, b, c; iii; iv, c; v, A, b: c, vi: D, iii: E, ii, b: F, i.]
47. —. Sponges; in A Treatise on Zoology, edited by E. Ray Lankester, Part ii, Chap. iii, 178 pp., 97 figg.  
Review in Geol. Mag. (3) vii, 1900, pp. 525 & 526. Review by R. F. S. in Irish Natural. ix, No. 11, pp. 258 & 259 (Nov. 1900); by J. P. McM. in Science (n. s.) xii, No. 312, Dec. 21, 1900, pp. 959-961; by ANON. in Sci. Gossip vii, No. 77 (Oct. 1900), pp. 148 & 149. [II, A, ii, iii: B, i; ii, A, b, c, d; iii; iv, A, c, d; v, A, b; vi: c, i; vi: D, i: E, i; ii, A, b; iii, A, b. III, A, a, i: B, i. IV.]  
MOORE, J. P. (43) Zool. Rec. 1898. Abstract in J. R. Micr. Soc. 1900, p. 68.
48. ORUETA, D. Descripción de unas esponjas del Cantábrico. Act. Soc. Espan. 1900, pp. 103-107, 4 text-figg. (March, 1900). [III, A, a, ii, iv, D, ii, b.]
49. PANKHURST, E. A. The Flints of the Chalk. Rep. Brighton Soc. 1895, pp. 14-28, pls. i-iii. [II, B, i: D, vii.]
50. PEACH, B. N. & HORNE, J. The Silurian Rocks of Britain. I. Scotland. Mem. Geol. Surv. U. K. 1899, 749 pp. + explanations of plates, 27 pls., 1 map. [III, B, iv, g.]  
PEARL, R. See CARLGREN (7).  
PERRIER, E. (46) & (47) Zool. Rec. 1898; Abstract by HÉROUARD in Année biol. iv, 1898 (1900), pp. 317 & 318.  
POČTA, F. (49) Zool. Rec. 1898; Abstract in Rev. palæozool. iv (No. 3, July, 1900), pp. 139, 140).  
PRENANT, A. See LOISEL.
51. RICHARD, J. Les Campagnes Scientifiques de S.A.S. le Prince Albert I<sup>er</sup> de Monaco. Exposition Universelle de 1900. Principauté de Monaco. Monaco, 1900, 140 pp., 10 pls., 60 text-figg.  
Sponges, p. 68 and pl. ix.
52. ROTHPLETZ, A. Über einen jurassischen Hornschwamm und die darin eingeschlossenen Diatomeen. Zeitschr. Deutsch. geol. Ges. lii, Heft 1 (March, 1900), pp. 154-160.  
Abstract by LENDENFELD in Zool. Centrbl. vii, No. 26, p. 923. [III, B, iii, b. IV, D, iii, A.]
53. —. Nachtrag zu einem Aufsatz über einen neuen jurassischen Hornschwamm und die darin eingeschlossenen Diatomeen. T. c. lii, Heft 2 (June, 1900), pp. 388 & 389. [Corrects horizon given in (52).] [III, B, iii, b.]

54. ROWE, A. W. How to Develop Delicate Organisms from the Chalk, and Exhibit them in Museums. Rep. Mus. Ass. 1900, pp. 121-124. [II, F, i.]
55. —. The Zones of the White Chalk of the English Coast. I. Kent and Sussex. P. Geol. Ass. xvi, pp. 289-368, pls. ix & x (Feb. 1900). List of Sponges, pp. 359-361. [III, B, iii, b.]
56. SARDESON, F. W. The Saint Peter Sandstone. Bull. Minnesota Ac. iv, No. 1, Part i, 1896, pp. 64-88. [III, B, iv, h. IV, G.]
- SCALES, F. S. See EVANS.
- SCHOBEL. See MAAS (39) & SUKATSCHOFF.
57. SCHRAMMEN, A. Beitrag zur Kenntnis der obersten Tetractinelliden. Mt. Mus. Hildesheim, No. 10 (Dec. 1899), 9 pp., 3 pls. with descriptions. [III, B, iii, b. IV, D, i, a, b, l.]
58. SCHUCHERT, C. Lower Devonian Aspect of the Lower Helderberg and Oriskany Formations. Bull. Geol. Soc. Amer. xi, pp. 241-333. [III, B, iv, f.]
59. —. On the Lower Silurian (Trenton) Fauna of Baffin Land. P. U. S. Mus. xxii, pp. 143-177, pls. xii-xiv.  
Reviews by STUART WELLER, J. Geol. viii, No. 3 (April-May, 1900), pp. 279 & 280, and by R. D. GEORGE, t. c. No. 4 (May-June, 1900), pp. 378 & 379. Summary quoted in Amer. J. Sci. x, p. 81, No. 55 (July, 1900). [III, B, iv, h.]
- See HALL & CLARKE (20).
60. SCHULZ, E. Die Hornschwämme von Thursday Island und Amboina. Semon's Zoologische Forschungsreisen in Australien und dem Malayischen Archipel, Bd v, Lief v. Denk. Ges. Jena viii, pp. 525-544, pl. xliii and description.  
Abstract by LENDENFELD in Zool. Centrbl. vii, p. 923 (Dec. 1900). [II, B, ii, b, c; iii; iv, c, d. III, A, a, iv. IV, D, iii, a.]
61. SCHULZE, F. E. Mittelmeer Hexactinelliden. Berichte der Commission für Erforschung des östlichen Mittelmeeres, Zoologische Ergebnisse xii, Wien 1900, pp. 1-10 [sep. pag.], pl. i. Reprinted from Denk. Ak. Wien, lxix, 1900. [The entire volume has not yet reached English libraries, so that the Recorder is unable to quote the original pagination.] [II, F, iv. III, A, a, ii. IV, C, i, ii.]
62. —. Hexactinelliden des Rothen Meeres. Berichte der Commission für Oceanographische Forschungen, Zoologische Ergebnisse xvi, Wien, 1900, pp. 1-14 [sep. pag.], pls. i-iii, with descriptions. Reprinted from Denk. Ak. Wien lxix, 1900. [Cf. Observations on No. 61, supra.] [III, A, a, iii. IV, C, i.]
63. —. Die Hexactinelliden. Roemer & Schaudinn, Fauna Arctica, Jena, 1900, Bd i, pp. 87-108, pls. i-iv, with descriptions. [II, B, iii; v, a, b. III, A, a, v. IV, C, i.]
64. —. Ueber *Corbitella speciosa* Quoy et Gaimard und *Corbitella corbicula* Bowerbank. SB. Ges. naturf. Berlin, 1900, Nr 6/7, pp. 156-165 (read 17th July, 1900). [IV, C, i.]
65. —. Hexactinelliden des Indischen Oceans. III Theil. Abh. Ak. Berlin, 1899-1900 (1900), pp. 1-46, pls. i-vii. [III, A, a, iii. IV, C, i, ii.]
- (35) Zool. Rec. 1899. Abstract in J. R. Micr. Soc. 1900, p. 334 and by LENDENFELD in Zool. Centrbl. vii, p. 873 (Dec. 1900).

SOLLAS, W. J. See HINDE (22).

66. STENROOS, K. E. Das Thierleben im Nurmijärvi-See. Eine faunistisch-biologische Studie. Acta Soc. Faun. Fenn. xvii, 1898-1899, Art. 1, 259 pp., 3 pls., and a map.  
*Spongillidae*, pp. 37 & 38. [III, A,  $\beta$ , i.]
67. STILES, M. H. Freshwater Sponges in Yorkshire. Naturalist, 25, No. 526 (Nov. 1900), p. 331, with a figure. [III, A,  $\beta$ , i.]  
SUKATSCHOFF, B. (39) Zool. Rec. 1899.  
Abstract by SCHOEBEL, with special reference to methods, in Zeitschr. wiss. Mikr. xvii, Heft 3 (31st Dec. 1900), pp. 344 & 345.
- 67A. \*TAKESHITA, T. [Notice of the discovery of *Euplectella* sp. off the Southern Coast of the Province of Satsma in Kyûshû.] Zool. Mag. Tokyo xii, p. 261 (July, 1900). [III, A,  $\alpha$ , iv.]
68. THIELE, J. Kieselschwämme von Ternate. I. Abh. Senckenb. Ges. xxv, Heft i, 1900, pp. 17-80, pls. ii & iii.  
The author revises the determination of the species in this collection given by KIESCHNICK (24), Zool. Rec. 1896, and redescribes the specimens. [II, A, iii: B, iv, c. III, A,  $\alpha$ , iv. IV, D, i,  $\alpha$ , b, 1, 2; ii,  $\alpha$ , 1, 2, b.]  
— (41) Zool. Rec. 1899. Abstract in J. R. Micr. Soc. 1900, p. 68.
69. TOPSENT, E. Éponges siliceuses, *Cliona celata* (Grant 1826). Zoologie Descriptive des Invertébrés, Paris, 1900 (published 1899), i, chap. vi, pp. 148-174, figg. 53-59. [II, B, ii, b; iii; iv, c; v,  $\alpha$ , b: c, ii: D, ii, iii: E, ii, b. IV, B, ii.]
70. —. Étude Monographique des Spongiaires de France. III. Monaxonida (Hadromerina). Arch. Zool. exp. (3) viii, 1900, pp. 1-331, pls. i-viii.  
Notice in J. R. Micr. Soc. 1900, p. 680. Abstract by LENDENFELD, Zool. Centrbl. vii, pp. 923-927 (Dec. 1900). [II, B, ii, b, c, d; iii; iv, c, d; v,  $\alpha$ , b: c, iv: D, ii; iii; vi: E, ii, b; iii,  $\alpha$ , b. III, A,  $\alpha$ , ii. IV, D, ii,  $\alpha$ , 1, 2, b.]
71. TORRALBAS, J. I. Informe sobre la veda de la pesca de esponjas. An. A. Habana, Tomo 36, Entrega No. 426, pp. 263-272 (March, 1900). [II, F, ii.]  
VOSMAER, G. & PEKELHARING, C. Over het opnemen van voedsel bij sponzen. Onderz. Physiol. Lab. Utrecht (5), Deel 1, pp. 1-30.  
Translation into Dutch of (71) Zool. Rec. 1898, Pt. I.  
— & —. De Kraagcellen van Sponzen. T. c. pp. 31-39.  
Translation into Dutch of (71) Zool. Rec. 1898, Pt. IV.
72. WALLER, J. G. On an Undescribed British Sponge of the genus *Raphiodesma* Bowerbank. J. Quekett Club (2), vii, No. 46 (April, 1900), pp. 253-256, pl. 14 (read Oct. 20, 1899). [III, A,  $\alpha$ , ii. IV, D, ii, b.]
73. WELLER, S. The Succession of Fossil Faunas in the Kinderhook Beds at Burlington, Iowa. Rep. Geol. Surv. Iowa x, 1899 (1900), pp. 63-79. [III, B, iv,  $\alpha$ .]  
— See SCHUCHERT (59).
74. WELTNER, W. Süßwasser-Schwämme. Semon's Zoologische Forschungsreisen in Australien und dem Malayischen Archipel, Bd v, Lief v. Denk. Ges. Jena viii, pp. 517-524, pl. xlii, and description.  
Abstract by LENDENFELD in Zool. Centrbl. vii, p. 927 (Dec. 1900). [II, B, v,  $\alpha$ : E, iii, b. III, A,  $\beta$ , iv. IV, D, ii, b.]

75. WHITFIELD, R. P. Observations on and Descriptions of Arctic Fossils. Bull. Amer. Mus. xiii, Art. 2, pp. 19-22, pls. i & ii. [III, B, iv, g, iv, c, i.]
76. — & HOVEY, E. O. Catalogue of the Types and Figured Specimens in the Palæontological Collection of the Geological Department, American Museum of Natural History. Bull. Amer. Mus. xi, part iii (Oct. 12, 1900), pp. 189-356. [III, B, iv, f, iv, c, ii.]
77. WILSON, H. V. Marine Biology at Beaufort. Amer. Natural. xxxiv, No. 401 (May, 1900), pp. 339-360, 5 figg.  
Sponge fauna, p. 350. [III, A, a, ii.]
78. ZAHÁLKA, Č. Pásmo ix.—Březenské-křídového útvaru v Poohří. (Die ix (Priesener) Etage der Kreideformation im Egergebiete.) SB. Bohmisch. Ges. 1899 (1900), Art. iv, 103 pp., 6 pls. [III, B, iii, b.]
79. —. Pásmo x.—Teplické-křídového útvaru v Poohří. (Die x (Tepitzer) Etage der Kreideformation im Egergebiete.) T. c. Art. xi, 51 pp., 3 pls. [III, B, iii, b, iv, c, ii.]
80. ŽELÍZKO, J. V. Křídovém útvaru okolí Pardubic a Přelouče. (Über die Kreideformation in der Umgebung von Pardubic und Přelouč.) T. c. Art. xviii, 18 pp. [III, B, iii, b.]
81. ZEMLITSCHKA, F. Ueber die Aufnahme fester Theilchen durch die Kragenzellen von Sycandra. Zeitschr. wiss. Zool. 67, Heft 2 (April, 1900), pp. 241-246, 2 text-figg.  
Abstract in J. R. Micr. Soc. 1900, p. 472. [II, c, ii.]
82. ZITTEL, K. A. VON. Text-Book of Palæontology, translated and edited by C. R. Eastman. Vol. i, pp. viii + 706, with 1476 woodcuts. Macmillan & Co., London and New York, 1900. [N.B. pp. 1-352 published as Part i, in New York but not in London, in 1896.] Sponges, pp. 41-67.  
Reviews in Amer. J. Sci. ix, p. 388, No. 53 (March, 1900); Sci. Gossip vi, p. 340, No. 71 (April, 1900). [II, A, ii; B, i, iv, d, III, B, i, iv, A, B, ii: c, i, ii: d, i, b, 1, 2; ii, b.]
83. ZSCHOKKE, F. Die Tierwelt der Hochgebirgsseen. Denk. Schweiz. Ges. xxxvii, 1900. Sep. Publ. Zurich, 1900, 400 pp., 8 pls., 1 map. Halichondrinæ (*Spongillinae*), p. 73. [III, A, B, i.]

## II. BIOLOGY.

### A. EVOLUTION.

#### (i) *General Principles.*

Homoplasy in the skeleton of Lithonina and Lithistida. Two mechanical problems are solved in practically the same manner and independently, namely (1) the economization of energy in the production of water currents, and (2) the best disposition of rigid material to resist stresses in the organism; SOLLAS in discussion on HINDE (22).

#### (ii) *Relations of Sponges.*

Position of Sponges in the Animal Kingdom drawn that they are not Coelentera, but that there as to their origin, between which it is not p

present, namely (1) that they are descended from Choanoflagellate ancestors, independently of other Metazoa, hence *Parazoa* Sollas, and (2) that they have a common origin with other Metazoa as far as the gastrula stage, after which they have evolved in a different direction, their germ-layers becoming reversed in position, hence *Enantiozoa* Delage; MINCHIN (47) pp. 158-161. Sponges regarded as *Parazoa*, one of the two primary branches of the Metazoa, the other being the *Enterozoa*; LANKESTER (33) pp. 1, 2.

Porifera classed as Cœlenterata; DUBOWSKI (13) p. 446.—As a sub-branch of the sub-kingdom Cœlenterata; ZITTEL (82) p. 41.

### (iii) *Phylogeny.*

Phylogeny of Sponges in General; MINCHIN (47) pp. 161, 162.—Sponges and Radiolarians form the only extensive Pre-Cambrian fauna: speculations as to the origin of Sponges from Protozoa; HUTTON (24) pp. 348, 349.

Phylogeny of Calcarea; MINCHIN (47) p. 109.

Phylogeny of Demospongiæ, with genealogical tree; KIESCHNICK (26) pp. 579-581.—Phylogeny of Demospongiæ; MINCHIN (47) pp. 162-164.—Descent and Affinities of the Oligosilicina (*Chondrosiina*); THIELE (68) p. 65. [See also TOPSENT (70), B, iv, c (p. 16 infra).]

## B. MORPHOLOGY.

### (i) *General Accounts.*

The Morphology and Life History of Sponges in General; MINCHIN (47) pp. 2-85.—General Accounts of Sponge Organisation; HALL & CLARKE (20) pp. 14-17; ZITTEL (82) pp. 41-45.—Popular accounts of the Organisation of Sponges; FIELDER (16) & (17); PANKHURST (49).

### (ii) *External Characters.*

(a) **Attachment.**—In Sponges generally; MINCHIN (47) pp. 2 & 3.—Mode of attachment of Sponges, especially *Dictyospongiæ*: in *Thysanodictya* and *Phragmodictya* “by means of a frill or collar (*periloph*) encircling the truncated base”; HALL & CLARK (20) p. 17.

(b) **Form and Mode of Growth.**—In Sponges generally; MINCHIN (47) pp. 2-23.—Forms of Sponges, general account; HALL & CLARKE (20) p. 16.—Variations and Genetic Relations of Form in *Dictyospongiæ*; HALL & CLARKE (20) pp. 33-36.—Varieties of form and growth in *Clathrina coriacea* correlated with habitat; MINCHIN (46) pp. 110-119.—Polymorphism of *Cliona celata*, pp. 38-42, and *C. viridis*, pp. 89 & 93: they occur as boring forms, enveloping forms, and massive or raphyroid forms; TOPSENT (70) and (69) pp. 151 & 152.—Form varieties of *Hadromerina* generally, p. 13: of *Ficulina ficus*, p. 215: of *Suberites carnosus*, pp. 236 & 237: of *Tethyspira spinosa*, pp. 261 & 262; TOPSENT (70).—External Form and Appearance of Keratosa; SCHULZ (60) p. 528.

(c) **Colour.**—In Sponges generally; MINCHIN (47) pp. 24-26.—Colour varieties of *Clathrina coriacea*; MINCHIN (46) p. 120.—Colours of *Hadromerina*: generally due to zoonerythrin, and varies from pale yellow to orange red. It is in the smaller species, especially, that the colour may be distinctive, and shows the richest tones, vermilion, scarlet, green, blue, etc.; TOPSENT (70) pp. 14 & 15.—Colour variations of *Cliona vastifica*, p. 60: of *C. schmidtii*, p. 81: of *C. viridis*, p. 95: of *C. viridis*, var. *carteri*,

p. 100: of *Hymedesmia bistellata*, p. 126: of *Polymastia mammillaris*, p. 139: of *Polymastia robusta*, p. 154: of *Prosuberites longispina*, p. 175: of *Terpios fugax*, due to presence or absence of invading Thallophytes, pp. 198 & 199: of *Ficulina ficus*, p. 216: of *Suberites domuncula*, p. 229, and *S. carnosus*, p. 238: of *Mesapops stellifera*, p. 255: of *Coppatias johnstoni*, p. 275: of *Tuberella aaptos*, p. 293: of *Tethya lyncurium*, p. 302; TOPSENT (70).—Colours of Keratosa; SCHULZ (60) p. 528.

(d) **Consistence, Texture, Smell, etc.**—In Sponges generally, MINCHIN (47) p. 26.—Texture and consistence of *Hadromerina*; TOPSENT (70) pp. 15 & 16.—Odour, like a laundry ("odeur de lessive"), of *Laxosuberites rugosus*, *Acanthella acuta*, *Plumohalichondria plumosa*, and *Stylorella columella*, p. 189: odour of sulphuretted hydrogen, in decomposing *Terpios fugax cerulea*, p. 203: phosphoric odour in *Suberites domuncula*, p. 229; TOPSENT (70).

### (iii) *Anatomy of the Soft Tissues. Canal System.*

Of the Olynthus and of Sponges in general; MINCHIN (47) pp. 27–37.

The Canal System of the Calcareæ; MINCHIN (47) pp. 92–100.—Anatomy of *Clathrina coriacea*; MINCHIN (46).—Canal System of *Plectoninia*; HINDE (22) p. 56.—Anatomy and Canal System of *Astrosclera willeyana*; LISTER (38) pp. 468–470.

Canal System of Hexactinellids; MINCHIN (47) pp. 111–116.—Anatomy of *Aulocystis zitteli*, pp. 6 & 7, pl. ii, fig. 3, and *A. grayi*, pp. 2 & 3, pl. i, fig. 5: of *Tretocalyx polae*, p. 9, pl. iii, fig. 1; SCHULZE (62).—Anatomy of *Schaudinnia arctica*, pp. 87–93, pl. ii: of *Trichasterina borealis*, p. 102, pl. iv, figg. 1 & 2: of *Scyphidium septentrionale*, p. 105, pl. iv, fig. 11; SCHULZE (63).

Canal System of Demospongiæ; MINCHIN (47) pp. 125–130.—Anatomy and Canal System of *Cliona celata*; the so-called exhalant and inhalant canals are believed to be in direct continuity, so that the distinction between these two sorts of canals is arbitrary and artificial. Doubt is thrown upon the existence of prosopyles in the chambers; in any case the calcareous corpuscles detached by the sponge are too large to pass through them, and must go direct from the inhalant to the exhalant passages; TOPSENT (70) pp. 47–52, and (69).—Anatomy and Canal System of *Polymastia mammillaris*, pp. 139–143: of *P. robusta*, pp. 152–155: of *Quasillina brevis*, pp. 161 & 162: of *Prosuberites longispina*, pp. 175 & 176: of *Ficulina ficus*, pp. 217 & 218: of *Suberites domuncula*, p. 230: of *S. carnosus*, pp. 239 & 240: of *Rhizaxinella pyrifer*, p. 246: of *Tuberella aaptos*, p. 291: of *Tethya lyncurium*, pp. 303–306; TOPSENT (70).—Canal System of *Ephydatia blembingia*; EVANS (15) pp. 77 & 78.—Canal System of Keratosa; SCHULZ (60) pp. 528 & 529.

### (iv) *Skeletal System.*

(a) **General Accounts.**—MINCHIN (47) pp. 37–43.

(b) **Material of the Skeleton.**—Composition of the skeleton of *Astrosclera*; the inorganic constituent is aragonite and not calcite as in true Calcareæ; the organic basis agrees in staining properties with that of calcareous sponge apicules; LISTER (38) pp. 463–466.

Nature of skeletal material of *Receptaculites*; the specimens examined show no trace of organic structure but are composed of two replacements, calcite first and silica afterwards; ETHERIDGE & DUN (14) p. 75.



(c) **Morphology and Development of Skeletal Elements.**—

Spicule formation and its relation to the crystalline nature of the spicule. In the formation of calcareous spicules [monaxons] two consecutive processes must be distinguished; (1) a purely organic, cellular activity, which determines the form; (2) an inorganic process of crystallization, which determines the contents, of the structures in question; MAAS (40).

Morphology of calcareous sponge spicules, pp. 101–103: development and phylogeny, pp. 107–109; MINCHIN (47).—Spicule formation in *Clathrina coriacea*; MINCHIN (46) pp. 135–138.—Spicule formation in *Sycandra setosa*. The monaxons arise each in a single mother cell, and there is never more than one cell on the smaller spicules of this class, but the large monaxons have numerous formative cells upon them, not derived from division of the mother cell, but from the dermal layer *de novo*. The first rudiment of the spicule is laid down very slowly within the cell, but as soon as it comes to project from the cell, it grows with great rapidity, apparently by a process of crystallization. The triradiates also arise each in a single mother cell as a concretion, but at a later stage they bear several formative cells. The quadriradiates are formed by addition of a fourth ray to a triradiate through the agency of cells of the dermal layer. Hence the triradiates of Sycons are formed differently from those of *Clathrinidæ*, and similar calcareous spicules may have quite different origins and be phylogenetically independent of each other. The tri- and quadriradiates do not correspond in any way with the pores as regards number or position; MAAS (39) pp. 224–227.

Origin of the skeletal elements (spherules) of *Astrosclera*; each spherule originates in a single cell; with continued growth adjacent spherules come into contact, to the exclusion of the soft parts, and lose their spherical form and become polyhedral; LISTER (38) p. 465.

Morphology of Hexactinellid spicules; MINCHIN (47) pp. 116–118 and p. 120.—Morphology of the spicules of *Dictyospongidae*, pp. 29–33, figs. 4–7; the term *clemes* employed for rods with a series of barbs along the sides, p. 20; HALL & CLARKE (20).

Morphology and Phylogeny of the spicules of Tetraxonida, pp. 130–135: of Monaxonida, pp. 137 & 138; MINCHIN (47). All tetraxon spicules of Tetractinellids to be considered as megascleres, all polyaxons as microscleres; THIELE (68) p. 64.—Skeletal structure and spiculation in *Hadromerina* generally. Siliceous sponges may be supposed to have possessed primitively only asters, certain of which increased in size, with reduction of the actines, to become megascleres, as in the calthropes of Pachastrellidæ. By further reduction originated the diactinal and monactinal monaxons; TOPSENT (70) pp. 18–20: spiculation of *Cliona celata*; tendency to reduction of spiculation in this species; TOPSENT (69) pp. 155–157, and (70) p. 43.

Formation of amphidiscs round the gemmule of *Ephydatia blebningia*. Each amphidisc is formed in a scleroblast in the tissues of the sponge body, and when it has attained its ultimate form, the scleroblast migrates with it in an amoeboid manner towards the gemmule and pushes its way between the cells of the columnar layer which secretes the chitinous coat. The amphidiscs are placed in position in the protective coat of the gemmule, and the scleroblasts then become modified to form part of the intermediate layer of the protective coat; EVANS (15) pp. 92–94.

Spongion fibres, structure, pp. 42, 43 & 140, 141; formation and growth, pp. 46 & 47; filaments of *Hircinia*, pp. 142 & 143; MINCHIN (47); Spongion fibres; SCHULZ (60) p. 529.

Alleged occurrence of spongin in the intervals between the vertical and horizontal spicular bands in †*Hyphantenia* (*Dictyospongida*, Hexactinellida, Lyssacina); HALL & CLARKE (20) p. 188.

Spicules of Octactinellida and Heteractinellida; MINCHIN (47) pp. 155 & 156.

(d) **Skeletal Anatomy.**—Arrangement of the spicules in the skeleton of Calcarea; MINCHIN (47) pp. 103–107.—Structure of the skeleton of Pharetrones; the spherulitic structure probably of secondary origin, not indicating any relationship with Astrosclera; LISTER (38) pp. 473–479.—Skeleton of Pharetrones; ZITTEL (82) pp. 62 & 63.—Structure of the skeleton of Lithonina; HINDE (22).—Structure and Arrangement of skeleton of *Astrosclera*, pp. 467 & 468: comparison with that of Pharetrones, pp. 473–479; LISTER (38).

Arrangement of the skeleton of Hexactinellids; MINCHIN (47) pp. 118–120.—Skeletal Arrangement in Hexactinellida, and especially in *Dictyospongia*, with two figures [one original]; HALL & CLARKE (20) pp. 17–20.—Structure of *Receptaculites australis*; ETHERIDGE & DUN (14).

Arrangement of the skeleton of Tetraxonida, pp. 135–137; of Monaxonida, pp. 138–140; MINCHIN (47).—Changes in skeletal structure correlated with changes in external form by growth, in *Cliona celata*; TOPSENT (70) p. 41.

Arrangement and phylogeny of Keratose skeletons; MINCHIN (47) pp. 141–144.—Skeletal Anatomy of Keratosa; SCHULZ (60) p. 529.

[N.B. Details of the spiculation and skeletal anatomy of individual species, such as are found in every systematic description, are not recorded separately here.]

#### (v) *Histology.*

(a) **General Accounts.**—Histology of Sponges in General; MINCHIN (47) pp. 43–63.

Histology of Calcarea; MINCHIN (47) pp. 27–31 & pp. 107–109: of *Clathrina coriacea*; MINCHIN (46): of *Astrosclera willeyana*; LISTER (38) p. 469.

Histology of Hexactinellida; MINCHIN (47) pp. 120 & 121: of *Schaudinnia arctica*; SCHULZE (63) pp. 97–99, pl. iii.

Histology of *Cliona celata*; TOPSENT (70) pp. 45 & 46 and (69): of *Cliona viridis*; TOPSENT (70) p. 97: of *Ephydatia multidentata*; WELTNER (74) p. 521: of Keratosa; SCHULZ (60) pp. 529 & 530.

(b) **Histology of Special Organs or Classes of Cells.**—Nervous system: doubts thrown upon the existence of any differentiated nerve cells in sponges; MINCHIN (47) pp. 46–48.

“Cellules sphéruleuses”, their importance for systematic determinations, even in dried specimens; TOPSENT (70) pp. 45 & 46: their probable homology with the porocytes of Calcarea; MINCHIN (46) p. 135, and (47) p. 50, and p. 144.—“Cellules sphéruleuses” of *Cliona celata*, p. 42 and pp. 45 & 46: of *C. schmidtii*, p. 81: of *C. viridis*, p. 97: of *C. viridis*, var. *carteri*, p. 101: of *Spirastrella minax*, p. 109: of *Polymastia mammillaris*, p. 143: of *Quasillina brevis*, p. 162: of *Prosuberites longispina*, p. 175: of *Laxosuberites rugosus*, p. 187: of *Rhizaxinella pyriferia*, p. 246: two kinds, present in *Mesapos stellifera*, p. 255: of *Tethyspira spinosa*, p. 259: of *Tuberella acipios*, p. 291: of *Tethya lyncurium*, p. 306; TOPSENT (70).

Collar cells of *Ascandra falcata*, *Clathrina coriacea*, and *Leucosolenia complicata*; MINCHIN (47) pp. 54–56, fig. 52: of *Clathrina coriacea*; MINCHIN (46) p. 133: of *Astrosclera*; LISTER (38) p. 469: of *Schaudinnia arctica*; SCHULZE (63) p. 98, pl. iii: of *Cliona celata*, united by their collars; TOPSENT (69) pp. 159 & 168; (70) pp. 46 & 51.

#### (vi) *The Germ Layer Question.*

The sponges composed of two layers, with archæocytes; reasons against regarding the parenchymal tissues as mesoderm; MINCHIN (47) p. 63.

## C. PHYSIOLOGY.

(i) **General Accounts.**—MINCHIN (47) pp. 85-92.

(ii) **Nutrition.**—Ingestion of solid particles by collar cells in *Sycondra raphanus*; only the collar cells take up suspended particles, and hand them on to cells of the parenchyma, if nutritious; if not they cast them out again into the water. The collar cells near the prosopyles are the first to ingest particles; ZEMLITSCHKA (81).—Ingestion by collar cells and amoeboid cells in *Cliona celata*; TOPSENT (69) p. 170.

(iii) **Respiration.**—Vacant.

(iv) **Secretion and Excretion.**—**Pigments, Ferments, etc.**—Purple pigments of *Suberites wilsoni* and *Polyopogon* [= *Poliopogon*] *gigas*; that of the former is "Spongioporphyrin" (Lankester), but that of the latter is quite different from spongioporphyrin; MACMUNN (45).—Pigment granules in the amoeboid cells and in the collar cells of *Cliona vastifica* and *C. lobata*, pp. 60 & 73; pigment in the cellulæ spheruleuses of *C. schmidtii*, p. 81; pigments of *Cliona viridis*, p. 95; of *Prosuberites longispina*, p. 175; of *Laxosuberites rugosus*, p. 186; (zoonerhythrin) of *Ficulina ficus*, p. 216; of *Mesapos stellifera*, p. 255; of *Tethyspira spinosa*, p. 259; of *Tuberella aptos*, pp. 291 & 293; TOPSENT (70).

(v) **Irritability, Contractility, etc.**—Contractility and irritability developed to a high degree in *Hadromerina*, p. 16; Contractility of *Tethya lyncurium*, pp. 303 & 304; TOPSENT (70).

(vi) **Individuality.**—Of sponges in general; MINCHIN (46) p. 119, and (47) pp. 89-91.—Of sponges, especially of *Dictyospongida*; HALL & CLARKE (20) p. 16.

(vii) **Miscellanea.**—**Experimental Physiology.**—Sponge larvæ uninfluenced by the action of the constant current; no trace of galvanotaxis; CARLGREN (7) pp. 466 & 478.

## D. BIONOMICS.

(i) **General Accounts.**—MINCHIN (47) pp. 88 & 89.

(ii) **Special Habits.**—*Cliona celata*, its methods of perforating shells, rocks, etc.; it attacks the shells of living animals as well as dead ones, and does much damage to oysters, producing what is termed the *maladie du pain d'épices*; its effects upon the oysters, and remedies against the sponge; TOPSENT (69) pp. 152 & 153, 173 & 174; (70) p. 18 and pp. 36-38.

(iii) **Habitat.**—*Clathrina coriacea*; MINCHIN (46).—Mode of Occurrence of *Dictyospongida*; HALL & CLARKE (20) pp. 37-41.—*Dictyospongida*, "the sandy matrix on the surface of which their Devonian progenitors [i.e. of the Hexactinellida] lived indicates a comparatively shallow sea", HINDE in review.—Habitats of *Hadromerina* on French Coasts; TOPSENT (70).—*Cliona celata*; TOPSENT (69).

(iv) **Defence and Protection.**—Vacant.

(v) **Enemies of Sponges.**—Vacant.

(vi) **Parasitism and Commensalism.**—Symbiosis in sponges generally; in *Dictyospongida* markings occur which appear to indicate the presence of a symbiotic Annelid; HALL & CLARKE (20) pp. 21 & 22.—

Peculiar basket-shaped bodies in *Ephydatia blenbingia*, of uncertain nature: perhaps they are parasitic sponges; EVANS (15) pp. 74 & 75, footnote.—Occurrence of *Alpheus* in Sponges; DUERDEN (12) p. 613.—“*Alpheus*-like Crustacea”; CONANT (10) p. 25.—*Hymedesmia bistellata* occupied by *Stephanoscyphus mirabilis*, p. 128: Commensal algæ (*Beggiatoa*) in *Terpios fugax*, giving the sponge its normal blue colour, pp. 199 & 203: *Suberites domuncula*, commensal with *Pagurus*: with *Tritata gibbosa*, an Amphipod: and with *Stephanoscyphus mirabilis*, pp. 227–229; TOPSENT (70).

(vii) **Sponges as Geological Agents.**—Relation of Sponges to Flints; PANKHURST (49).—Mode of preservation of *Dictyospongia*; HALL & CLARKE (20) pp. 36 & 37.—Mode of preservation of *Receptaculites australis*; ETHERIDGE & DUN (14).

## E. REPRODUCTION AND DEVELOPMENT.

### (i) *Germ Cells, Fertilization.*

Oögenesis, Spermatogenesis, Maturation, and Fertilization, summary of present knowledge; MINCHIN (47) pp. 60 & 61.

### (ii) *Embryology.*

(a) **General Accounts.**—MINCHIN (47) pp. 67–85.

(b) **Early stages, larvae, and metamorphosis.**—Embryonic development of *Clathrina coriacea* and other Ascons: description of the larvæ and metamorphosis; MINCHIN (46).—Development of *Clathrina blanca*; MINCHIN (47) pp. 68–75.—Metamorphosis of the larva of *Sycandra setosa*, and its development up to the Ascon stage, pp. 218–228: development of *Sycandra raphanus* from the Ascon to the complete Sycon stage, pp. 228–236, pl. x, fig. 8, and pl. xii; MAAS (39).—Ova and embryos of *Astrosclera willeyana*; LISTER (38) p. 470, figg. 8, 9, 10.

Embryology of Demospongiæ; MINCHIN (47) pp. 144 & 145.—Reproduction of Hadromerina: occurrence of ova and embryos; TOPSENT (70) pp. 16 & 17.—Ova in *Cliona celata*; TOPSENT (70) p. 53 and (69) p. 171.—Ova of *Cliona vastifica*, p. 65: Ova and larvæ of *Cliona lobata*: some *Clionide* seem to be oviparous, others viviparous, p. 74: larvæ in *Alectona millari*, p. 26: ova in *Polymastia robusta*, p. 155: ova in *Ficulina ficus*, p. 221: ova and embryos of *Tethya lyncurium*, p. 312; TOPSENT (70).

(c) **Organogeny.**—Development of the Canal System in *Sycandra raphanus*: the flat epithelium lining the gastral cavity does not arise by flattening out of gastral collar cells, but is derived from the dermal layer, which grows in between the radial tubes and interrupts the primitive continuity of the gastral collared epithelium; MAAS (39) pp. 229–233.

### (iii) *Asexual Reproduction.*

(a) **Fission and Vegetative Budding.**—General Account: formation of free buds in Ascons; MINCHIN (47) pp. 63 & 64.

Budding in Hadromerina generally, pp. 17 & 18: external buds in *Pseudosuberites sulphureus*, pp. 169 & 170: budding in *Tethya lyncurium*, pp. 299–302; TOPSENT (70).

(b) **Germinal budding.**—General account of gemmule MINCHIN (47) pp. 65–67.—Gemmules of *Hadromerina*, pp. 17 *Cliona vastifica*, their structure, pp. 65–67: of *Prosuberites* p. 183: of *Ficulina ficus*, p. 222: of *Suberites domuncula*, p. 222: of gemmules (?) in *Tethya lyncurium*, pp. 301 & 305; TOPSENT (70).—of *Ephydatia blembingia*; their structure, pp. 78 & 79, and pp. 81–103. Four classes of cells take part in the formation of gemmule. (1) The reproductive portion of the gemmule is composed of yolk-containing wandering cells, no other cells entering its composition. (2) The chitinous coat is secreted by a layer of cells and (3) the coat of amphidiscs by scleroblasts. (4) They provide for the nutrition of these various cells. (2) and (4) pass into the sponge body after fulfilling their functions; EVANS (15).—of *Ephydatia multidentata*; WELTNER (74) p. 520.

## F. MISCELLANEA.

(i) **Technique.**—Methods for the study of Ascons; MINCHIN (47) pp. 145–147.—Methods for studying the minute structure of *Cliona willeyana*; LISTER (38) pp. 462 & 463.—Methods for obtaining and rearing Sycon larvae, and for the preservation of the various parts, especially with a view to the study of spicule formation; MINCHIN (47) pp. 217 & 218.—Methods for the study of *Cliona celata* and other siliceous sponges; TOPSENT (69) pp. 157, 160, and 170.—Methods for *Ephydatia blembingia*; EVANS (16) p. 72.—Methods for working out fossil sponges in the Chalk; ROWE (54).

(ii) **Economics.**—Regulation of Sponge Fisheries; TORRES (73).

(iii) **Bibliography.**—MAAS (43).

(iv) **History.**—Summary of previous knowledge of Mediæval Hexactinellids; SCHULZE (61) pp. 1–3. History of previous knowledge of gemmule formation, pp. 82–89, and criticism of earlier observations; EVANS (15).

## III. DISTRIBUTION.

### A. GEOGRAPHICAL.

#### α. MARINE.

(i) **General.**—Geographical Distribution of sponges in the Atlantic; MINCHIN (47), pp. 156–158.

(ii) **Atlantic Ocean and Adjacent Seas.**—British Coast: *Desma affinis*, n. sp.; WALLER (72).—Belgian Coast: a few common species; GILSON (19).—Coasts of France: list of *Hadromerina*, and the distribution of the species; TOPSENT (70) pp. 10–13.—Bay of Biscay: Coasts of Asturias, near Gijón, *Gellius* sp.; ORUETA (48).—Mediterranean: Hexactinellids: *Hexactinella* sp. and *Sympagella nux*; SCHULZE (61).—Hudson Bay: *Phakellia*, *Reniera*, *Suberites*, *Craniella*; LAMBE (32).—Coasts of N. E. Canada and Greenland: *Reniera*, *Gellius*, *Iophon*, *Phakellia*, *Suberites*, *Tentorium*, *Craniella*, *Thenea*, *Leucandra*, *Sycon*, *Grantia*, *Leucandra*, *Heteropia*, *Amphoriscus*, in all 20 species which 11 new; LAMBE (31).—Coasts of Canada: complete list of the fauna, with general distribution of each species quoted, and bibliography; LAMBE (32).—Beaufort, U.S.A.: common sponges; WILSON (77) p. 1.

(iii) **Indian Ocean and Adjacent Seas.**—General list of Hexactinellids, compiled from Schulze [(57) Zool. Rec. 1894, (43) Zool. Rec. 1895, and (65), Present Rec.]; ALCOCK (1).—Hexactinellida: *Pheronema*, *Hyalonema*, *Lophophysema*, n. g., *Euplectella*, *Regadrella*, *Dictyaulus*, *Lophocalyx*, *Farrea*, *Aphrocallistes*, including 13 spp. of which 7 are new; SCHULZE (65).—Red Sea: Hexactinellids, *Aulocystis* spp. and *Tretocalyx*, n. g., *polæ*, n. sp.; SCHULZE (62).

(iv) **Pacific Ocean and Adjacent Seas.**—Vancouver Island: *Leucandra taylori*, n. sp.; LAMBE (29).—Coasts of Canada and Alaska: Sponge fauna; LAMBE (32).—Western Pacific: *Astrosclera willeyana* from Sandal Bay, Lifu, Loyalty Islands and Funafuti; LISTER (38).—Funafuti: Sponge Fauna, *Astrosclera*, *Plectroninia*, *Clathrina*, *Chondrilla*, *Corticium*, *Placinolopha*, *Placinastrella*, *Erylus*, *Cliona*, *Dyscliona*, n. g., *Latrunculia*, *Agelas*, *Tedania*, *Chondropsis*, *Pachychalina*, *Luffariella*, *Psammopemma*, *Stelospongia*, *Polyfibrospongia*, in all 21 spp., of which 11 are new; KIRKPATRICK (28).—Sponges of Christmas Island: *Clathrina*, *Leucandra*, *Chondrosia*, *Chondrilla*, *Sidonops*, *Ecionema*, *Stelletta*, *Tetilla*, *Spirastrella*, *Pseudosuberites*, *Tethya*, *Hymeniacidon*, *Microciona*, *Iotrochota*, *Esperella*, *Desmacella*, *Stylotella*, *Rhizochalina*, *Gellius*, *Reniera*, *Petrosia*, *Hali-chondria*, *Euspongia*, *Spongelia*, in all 32 spp., of which 7 are new, and 2 n. var.; KIRKPATRICK (27).—Thursday Island and Amboina, Keratosa: *Cacospongia*, *Carteriospongia*, *Euspongia*, *Hircinia*, *Spongelia*, 10 spp., of which 2 are new; SCHULZ (60).—Ternate: *Dercitus*, *Chondrilla*, *Chondrosia*, *Tetilla*, *Ecionema*, *Penares*, *Psammastra*, *Stelletta*, *Erylus*, *Geodia*, *Sydonops*, *Placospongia*, *Theonella*, *Scleritoderma*, *Coppatias*, *Jaspis*, *Holarea*, *Tethya*, *Cliona*, *Spirastrella*, *Ciocalyptra*, in all 41 spp., of which 24 are new; THIELE (68).—Australia and Malay Archipelago: *Tetilla*, *Stelletta*, *Placospongia*, *Tethya*, *Spirastrella*, *Polymastia*, *Suberites*, *Chalina*, *Pachychalina*, *Phyllosiphonia*, *Siphonochalina*, *Toxochalina*, *Gellioides*, *Chondrocladia*, *Desmacella*, *Esperiopsis*, *Echinodictyum*, *Rhaphidophlus*, *Acanthella*, in all 31 spp., of which 27 are new; KIESCHNICK (26).—Victorian sponges, common shore forms, a popular account; FIELDER (16) and (17).—Japan: *Euplectella* sp.; TAKEISHITA (67A).

(v) **Arctic Seas.**—Hexactinellids, *Schaudinnia arctica*, n. g., n. sp., *Trichasterina borealis*, n. g., n. sp., *Scyphidium septentrionale*, n. g., n. sp.; SCHULZE (63).

(vi) **Antarctic Seas.**—Vacant.

### β. FRESHWATER SPONGES.—SPONGILLINÆ.

(i) **Europe.**—Yorkshire: spicules of *Spongilla lacustris* and *fluvialis* in sediments from various sources; STILES (67).—Chemnitz: *Ephydatia mülleri*, *Spongilla lacustris*, var. *lieberkühni*; HEMPEL (21).—Lakes of Finland: *Ephydatia fluvialis*, *Spongilla lacustris*; LEVANDER (35) and (36).—Finland: *Ephydatia mülleri*, *Spongilla fragilis*, *S. lacustris*; STENROOS (66).—Alpine Lakes: *Ephydatia mülleri*, *Spongilla fragilis* and *lacustris*; ZSCHOKKE (83) pp. 73, 74.

(ii) **Asia.**—Siamese Malay States: *Ephydatia blembingia*, n. sp., from River Blembing; EVANS (15).

(iii) **Africa.**—Vacant.

(iv) **Australia.**—*Ephydatia multidentata*, *Spongilla fragilis*, and *Spongillid* sp. incert.; WELTNER (74).

- Amphiporus bürgeri*, n.  
*Callinera* n. g. *bürgeri*  
 t. c. also Ofv. Ak.  
*Carinista*, n. g., p. 50  
 (Willey) Pt. v.  
*Carinoma tremaphora*  
 Zool. Anz. xxiii.  
*Cerebratulus natana*  
 p. 127, *sordidus*  
 p. 134, n. spp.;  
*C. viridis*, Ceylon, p.  
 xxiii.  
*C. torresianus*, p. 22  
 PUNNETT, P. Z.  
*Drepanophorus*  
 Zool. Results  
*Eupolia melanog-*  
 n. sp., p. 117  
*E. unistriata*, C.  
 ISLER, Zool.  
*E. rugosa*, p. 574  
 (Willey) Pt.  
*Gononemertes* n.  
 p. 321; B.  
*Lineus albocinctus*  
 Connect.  
*L. australis*, o.  
*L. viviparus*, p.  
 & 180; p.  
*Nemertopsis*  
 P. Irish  
*Stichostemura*  
 1900, p.  
*Taniosoma*  
*Tetrastemma*  
 829; T.  
*Zygeupolia*  
 Zool.

Anat.  
 orifice  
 body,  
 Franc.  
 Ex.  
 Zool.  
 Fi.  
 & Co.  
 H.  
 Pla.  
 na.  
 F.

(iv) PALLADIUS

(f) *Devonian*: Corniferous Rocks of Ohio, *Receptaculites*, *Stromatopora* [?], *Syringostroma* [?]; BOWNOCKER (5).—(Tentaculitenschiefer), *Receptaculites*; BURHENNE (6) p. 44.—*Dictyospongia*; HALL & CLARKE (20) pp. 58–62, 64–150.—Devonian Sponges in the American Museum of Natural History; WHITFIELD & HOVEY (76) pp. 190–193.—Helderbergian, N. America, *Hindia*, *Lysactinella*, *Receptaculites* and *Ischadites* spp.; ORISKANY, *Hindia*, sp.; SCHUCHERT (58).

(g) *Silurian*: Of Scotland, lists of Sponges; PRACH & HORNE (50) pp. 668, 686, 708.—(Niagara group), Princess Marie Bay and Summit, Cape d'Urville, Arctic regions, *Receptaculites pearyi*, n. sp.; WHITFIELD (75).—(Utica Slate), *Cyathodictya* and *Sphaerodictya*, pp. 24, 26; *Dictyospongia danbyi*, pp. 63 & 64 and p. 60; HALL & CLARKE (20).

(h) *Ordovician*: Of Minnesota, Saint Peter Sandstone, *Rauffella fucoida*, n. sp.; SARDESON (56).—Lower Silurian of Baffin Land, *Receptaculites* and *Ischadites*; SCHUCHERT (59) pp. 152 & 153.—Cambro-Silurian of Canada, *Coscinopora*, *Receptaculites*; BARLOW (3) pp. 121, 122, 298.

(k) Vacant.

(l) *Pre-Cambrian*: see III, B, iv, a.

#### IV. SYSTEMATIC.

##### A. PORIFERA, GENERAL.

The Porifera divided into three, possibly five classes, Calcarea, Hexactinellida, and Demospongiæ, to which perhaps should be added, as groups equal to the foregoing in systematic value, the Octactinellida and Heteractinellida of Hinde; MINCHIN (47). Divided into four subclasses, Myxospongiæ, Ceratospongiæ, Silicispongiæ and Calcispongiæ; ZITTEL (82).

[The systematic lists which follow are classified according to the arrangement adopted by MINCHIN (47).]

##### B. CALCAREA.

Calcarea in general, classification and list of genera and families; MINCHIN (47) pp. 109–111. Calcispongiæ, definition and characters; ZITTEL (82) pp. 62 & 63.

##### (i) HOMOCÆLA.

Diagnosis; MINCHIN (47) p. 110.

##### Family CLATHRINIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 110.

*Clathrina clathrus* O. S., figured; MINCHIN (47), p. 6, fig. 7. *C. coriacea* (Mont.), distribution and description of the varieties of form and colour, and of the organization and development of the sponge; MINCHIN (46): young specimens figured; MINCHIN (47) p. 5, fig. 2. *C. depressa* (Dendy), from Funafuti, 25–45 fathoms; KIRKPATRICK (28) p. 349. *C. lacunosa* Johnst., figured; MINCHIN (47) p. 8. *C. primordialis* (H.); KIRKPATRICK (27) p. 129. *C. reticulum* (O. S.), figured; MINCHIN (47) p. 6, fig. 6.

[The following species of "*Leucosolenia*" belong to the family *Clathrinidæ* as defined by MINCHIN (47).]

*Leucosolenia cancellata* Verrill, Strait of Belle Isle, 60 fathoms; Davis Strait, 60 fathoms; LAMBE (31) p. 27, pl. ii, figg. 5, 5a–c: general



distribution; LAMBE (32) p. 165. *L. pulcherrima* and *L. stipitata*; FIELDER (16) p. 69.

### Family LEUCOSOLENIIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 110.

*Leucosolenia complicata* (Mont.), and *L. lieberkühni* (O. S.), figured; MINCHIN (47) p. 5, figg. 3 & 4. *L. stolonifer*; FIELDER (16) p. 69. *L. variabilis* (H.), figured; MINCHIN (47) p. 5, fig. 5.

### (ii) HETEROCÆLA.

Diagnosis; MINCHIN (47) p. 110.

### Family SYCETTIDÆ.

Diagnosis of family and list of genera; MINCHIN (47), p. 110. *Sycones*, definition and characters of order; ZITTEL (82) p. 65.

*Sycon* seu *Sycandra*, *S. asperum* Lambe and *S. compactum* Lambe, distribution; LAMBE (32) pp. 165 & 166. *S. eglintonensis*, n. sp., Davis Strait, 15 fathoms; LAMBE (31) pp. 29 & 30, pl. ii, figg. 6, 6a-e; LAMBE (32) p. 166. *S. gelatinosum*; FIELDER (16) p. 69. *S. mundulum*, n. sp., Davis Strait, 10 and 60 fathoms; LAMBE (31) pp. 28 & 29, pl. iii, figg. 7, 7a-e; LAMBE (32) p. 166. *S. protectum* Lambe, redescribed, from Strait of Belle Isle, 60 fathoms, and west coast of Greenland; LAMBE (31) pp. 27 & 28, pl. i, figg. 4, 4a-j; LAMBE (32) p. 165: from Vancouver Island; LAMBE (29) p. 263. *S. raphanus*; FIELDER (16) p. 69: (*Sycandra*) *raphanus*, development from Ascon to Sycon stage; MAAS (39) pp. 228-236: observations on the ingestion of solid particles by the collar cells; ZEMLITSCHKA (81). *S. setosa* Leud., development of larva from fixation to Ascon stage; MAAS (39) pp. 218-228.

### Family GRANTIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 110.

*Grantia canadensis* Lambe, and *G. comorensis* Lambe, distribution; LAMBE (32) p. 166. *G. incrusta*, n. sp., from Davis Strait, 60 fathoms; LAMBE (31) p. 32, pl. vi, figg. 14, 14a-f; LAMBE (32) p. 167. *G. monstruosa* Breitf., distribution; LAMBE (32) p. 166. *G. phillipsii*, n. sp., from Davis Strait, 60 fathoms; LAMBE (31) pp. 30 & 31, pl. iv, figg. 9, 9a-i; LAMBE (32) p. 167.

*Leucandra* sp.; KIRKPATRICK (27) p. 129. *L. aspera* H., figured; MINCHIN (47) p. 9, fig. 12. *L. cumberlandensis*, n. sp., from Cumberland Sound, 20 fathoms, and Davis Strait, 60 fathoms; LAMBE (31) pp. 34 & 35, pl. v, figg. 12, 12a-j; LAMBE (32) p. 167. *L. taylori*, n. sp., from Vancouver Island; LAMBE (29) pp. 261 & 262, pl. vi; LAMBE (32) p. 167. *L. valida*, n. sp., from Davis Strait, 10 fathoms; LAMBE (31) pp. 32 & 33, pl. iv, figg. 10, 10a-e, and pl. v, figg. 11, 11a-e; LAMBE (32) p. 167.

*Leuconia pyriformis* Lambe, distribution; LAMBE (32) p. 167.

### Family HETEROPIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 110.

*Heteropia rogersi*, n. sp., from Strait of Belle Isle, 60 fathoms; LAMBE (73/31) pp. 35 & 36, pl. vi, figg. 13, 13a-g; LAMBE (32) p. 168. *Halleropsis macera*; FIELDER (16) p. 69.

## Family AMPHORISCIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 110.

- † *Amphoriscus thompsoni*, n. sp., from Strait of Belle Isle, 60 fathoms; LAMBE (31) pp. 36 & 37, pl. iii, figg. 8, 8a-j: LAMBE (32) p. 168.

## Family PHARETRONIDÆ seu PHARETRONES.

Diagnosis of family *Pharetronidæ*, with two families *Dialytinae* and *Lithoninae*, and list of genera; MINCHIN (47) p. 110: definition of order *Pharetrones*; ZITTEL (82) p. 63: structure of the skeleton from the point of view of their relations to *Astrosclera*; LISTER (38) pp. 473 & 479.

- (1) *Dialytina* (= *Dialytina* Rauff), sense restricted to denote subfamily † *Pharetronidæ*, as opposed to *Lithoninae*; MINCHIN (47) pp. 109 & 110: used in sense of Rauff, to denote a subclass of the Calcarea, opposed to *lithonina*; TOPSENT (69) p. 148.

† *Corynella* Z., genus defined, with figures of *C. quenstedti* Z., and its skeleton; ZITTEL (82) p. 64, and fig. 91; position of genus, and details of skeletal structure in *C. foraminosa*, *C. tetragona*, and *C. rugosa*; LISTER (38) pp. 476 & 477. *C. rugosa* Hinde and *C. socialis* Hinde; JUKES-BROWNE & HILL (25) p. 480.

† *Elasmostoma* From., genus defined, with figure of *E. acutimargo* Roem.; ZITTEL (82) p. 64, fig. 95. *E.* sp.; ZAHÁLKA (78) pp. 31, 92. *E. consobrinum* d'Orb., and *E. normannianum* d'Orb.; JUKES-BROWNE & HILL (25) pp. 68 & 480. *E. scitulum* Hinde; ROWE (55) p. 361.

† *Eudea* Lamx., genus defined; ZITTEL (82) p. 63.

† *Eusiphonella* Z., genus defined, with figures of *E. bronni* (Münst.); ZITTEL (82) p. 64, fig. 92.

† *Oculospongia tubifera* Goldf., figured; ZITTEL (82), p. 64, fig. 93.

† *Pachytulodia* Z., genus defined; ZITTEL (82) p. 64. *P. infundibuliformis* Goldf.; JUKES-BROWNE & HILL (25) p. 480.

† *Peronidella* (seu *Peronella*) Z., genus defined, with figures of *P. cylindrica* Münst. and *P. dumosa* From., includes *Siphonocalcia* From. and *Polycalia* From.; ZITTEL (82) p. 63, figg. 89 & 90. *P. furcata* Goldf.; JUKES-BROWNE & HILL (25) p. 480.

† *Pharetrosporgia struhani* Soll., structure of skeleton; LISTER (38) p. 477: JUKES-BROWNE & HILL (25) p. 480: ROWE (55) p. 361.

† *Polycalia*, vide etiam *Peronidella*.

† *Rhapidonema* Hinde, genus defined, with figure of *R. farringdonense* Sharpe; ZITTEL (82) p. 64, fig. 96.

† *Siphonocalcia*, vide etiam *Peronidella*.

† *Somphospongia* n. g. of *Pharetrones*, for *S. multiformis*, n. sp. from Kansas Coal Measures; BEEDE (4) pp. 128-130, pl. xxxiii, figg. 1-10.

† *Stellispongia* d'Orb., genus defined, with figure of *S. glomerata* Quenst.; ZITTEL (82) p. 64, fig. 94: position of genus; LISTER (38) p. 476. *S. variabilis*, skeletal characters described and compared with *Astrosclera*; LISTER (38) pp. 474 & 475.

† *Trema(to)cystia orbigny* Hinde, p. 68 and p. 480; † *T. siphonioides* Michl., p. 480; JUKES-BROWNE & HILL (25).

(2) *Lithoninae* (= *Lithonina* Rauff), placed as subfamily of *Pharetrosonidæ*; MINCHIN (47) p. 111: their relations to other Calcisponges, especially *Pharetrones*; HINDE (22).

† *Bactronella* Hinde, genus defined anew, and shown to belong to the *Lithonina*, intermediate between *Electroniniu* and *Petrostroma*; HINDE (22) p. 60. *B. australis*, n. sp., from Eocene rocks, Flinders, Victoria;



- HINDE (22) p. 62, pl. iv, figg. 12-19. †*B. parvula*, n. sp., from Mount Martha or Mornington Beds (Eocene) near Melbourne; HINDE (22) pp. 60 & 61, pl. v.
- †*Holcospongia floriceps* Phill., possibly a Lithonine; HINDE (22) p. 58.
- Petrostroma* Döb., comparison with *Plectroninia*; HINDE (22) p. 57.
- Plectroninia*, n. g. of Lithonina, diagnosed, p. 58, with type species †*P. halli*, n. sp., from Eocene clays at Griffin's Farm, Moorabool river, N. W. of Geelong, and from Polyzoal Limestone of Eocene age, Flinders, Victoria; HINDE (22) pp. 51-57, pl. iii, figg. 1-83, pl. iv, figg. 1-11. *P. hindei*, n. sp., from Funafuti, 50 fathoms; KIRKPATRICK (28) pp. 347-350, pl. xiii, figg. 1, a-r.
- †*Porosphæra*, cretaceous genus generally regarded as a Hydrocoralline, in reality closely allied to *Lithonina*; HINDE (22) p. 57. *P. sp.*; JUKES-BROWNE & HILL (25) p. 480. *P. globularis*; ROWE (55) pp. 299, 304 & 361. *P. pileolus*; ROWE (55) pp. 304 & 361. *P. urceolata* Phil., JUKES-BROWNE & HILL (25) p. 480. *P. woodwardi*; ROWE (55) pp. 304 & 361.
- †*Sestrostomella rugosa* Hinde, possibly a Lithonine; HINDE (22) p. 58.
- †*Tretocalia*, n. g. of Pharetrones, possibly of Lithonina, for *T. pezica*, n. sp., from Eocene limestone of Flinders, Victoria; HINDE (22) pp. 62 & 63, pl. iv, figg. 20-29.

### Family ASTROSCLERIDÆ.

*Astroscleridæ*, n. fam., defined; LISTER (38) p. 479.

*Astrosclera*, n. g. with type species *A. willeyana*, n. sp., from Sandal Bay, Lifu, Loyalty Islands, 33 fathoms, and from Funafuti, 100 fathoms; LISTER (38): description, reprinted from Lister, of the Funafuti specimen; KIRKPATRICK (28) pp. 346 & 347; MINCHIN (47) pp. 166-168.

### HOMOCÆLA INCERTÆ SEDIS.

- †*Amblysiphonella* Steinm., the genus should perhaps be united with *Sebargasia*, p. 391: *A. prosseri*, n. sp., from Upper Carboniferous (Webaunsee Formation), Nehawka and Weeping Water, Nebraska, pp. 389 & 390, pl. xxiii; CLARKE (9).
- †*Barroisia*, characters of genus, with figures of *B. anastomans* Mant., and its skeleton: includes *Ventriculites* Z., non Deffr. [? *Vetricillites*] and *Sphærocelia* Steinm.; should be placed amongst Sycons; ZITTEL (82) p. 65, fig. 97.
- Sebargasia*, vide etiam *Amblysiphonella*.
- Sphærocelia*, vide etiam *Barroisia*.
- †*Sphinctozoa* as a separate order; LISTER (38) p. 476: name used apparently for a genus, to be placed amongst Sycons; ZITTEL (82) p. 65; cf. CLARKE (9).
- †*Thaumastocelia* Steinm., notes on structure; LISTER (38) pp. 476 & 478: placed amongst Sycons; ZITTEL (82) p. 65.
- †*Vetricillites*, note on structure; LISTER (38) p. 476; vide etiam *Barroisia*.

### C. HEXACTINELLIDA.

Hexactinellida in general, classification, with list of families and genera; MINCHIN (47) pp. 121-125: defined as order, structural features briefly described; ZITTEL (82) p. 54.

(i) *LYSSACINA*.

Diagnosis, as subclass, with two orders, *Hexasterophora* and *Amphidisco-phora*; MINCHIN (47) p. 121: definition and characters, as suborder; ZITTEL (82) pp. 54 & 55.

## Order HEXASTEROPHORA.

Diagnosis; MINCHIN (47) p. 121.

## Family EUPLECTELLIDÆ.

Diagnosis of family, and of subfamilies *Euplectellina*, *Holascina*, and *Tægerina*, and list of genera; MINCHIN (47) pp. 121 & 122.

"*Aleyoncellum corbicula*" Bwk., correctly *Corbitella corbicula*: "*A. speciosum*" Quoy et Gaimard, correctly *Corbitella speciosa*; SCHULZE (64).

*Corbitella* Gray, 1867, has priority over *Habrodictyon* Wyville-Thomson, 1868: *C. speciosa* Quoy et Gaimard, and *C. corbicula* Bwk., history and synonymy of the species, the two species perhaps identical; SCHULZE (64).

*Dictyaulus elegans* F. E. S., from S.S.W. of Cape Comorin, 1316 metres, redescribed; SCHULZE (65) pp. 34 & 35.

*Euplectella* sp.; TAKESHITA (67A). *E. regalis*, n. sp., allied to *E. imperialis* Ijima, from Andamans, 741 meters depth; SCHULZE (65) pp. 24-30, pl. vi, figg. 1-9, diagnosis, p. 43.

*Habrodictyon* (-um) Wyville-Thomson, 1868, gives way to *Corbitella* Gray, 1867; SCHULZE (64).

*Regadrella decora*, n. sp., a species with "oxytetrasters" similar to those found in *R. okinoseana* Ijima, to which it is closely allied; from S.W. of Cape Comorin, 787 meters; SCHULZE (65) pp. 30-34, pl. vi, figg. 10-18, diagnosis, p. 43.

## Family HERTWIGIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 122.

## Family ASCONEMATIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 122.

*Sympagella nux* O. S., from Mediterranean, 414 and 444 meters; SCHULZE (61) pp. 3-7, pl. i, figg. 8-20.

## Family ROSSELLIDÆ.

Diagnosis of family, with sub-families *Leucopsacina*, *Lanuginellina*, *Rossellina* and *Acanthascina*, and list of genera; MINCHIN (47) p. 122.

*Lophocalyx spinosa*, n. sp., from W. of Andamans, 436-531 meters; SCHULZE (65) pp. 35-38, pl. vii, diagnosis, pp. 43 & 44.

*Rhabdocalyptus duxsoni* Lambe, distribution; LAMBE (32) p. 165.

*Schaulinnia*, n. g. [nom. nud. (33) Zool. Rec. 1899] of *Rossellida*, sub-fam. *Rossellina* for *S. arctica*, n. sp., [nom. nud. 1899 l. c.] from Arctic Ocean, 1000 meters; SCHULZE (63) pp. 87-100, pl. i, figg. 1-6, pls. ii & iii, diagnosis, p. 107.

*Scyphidium*, n. g. [nom. nud. (33) Zool. Rec. 1899] of *Rossellida*, sub-fam. *Rossellina*, for *S. septentrionale*, n. sp., [nom. nud. 1899, l. c.] from Arctic Ocean, 1000 meters; SCHULZE (63) pp. 104-107, pl. iv, figg. 11-17, diagnosis, p. 108.

*Staurocalyptus dowingii* Lambe, distribution; LAMBE (32) p. 165.

*Trichasterina*, n. g. [nom. nud. (33) Z.

fam. *Rossellinæ* for *T. borealis*, n. sp. [nom. nud. 1899, l. c.], from Arctic Ocean, 1000 meters; SCHULZE (63) pp. 100-104, pl. i, figg. 7, 8, 9, pl. iv, figg. 1-10, diagnosis, pp. 107 & 108.

## Order AMPHIDISCOPHORA.

Diagnosis; MINCHIN (47) p. 122.

### Family HYALONEMATIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 123.

*Hyalonema lamella*, n. sp., described from fragments of not absolutely certain systematic position, dredged S.W. of Cape Comorin, at 787 and 1530 meters, pp. 15-19, pl. iii, diagnosis, p. 42: *H. martabanense*, n. sp., from Bay of Martaban, 1171 meters, pp. 12-15, pl. ii, diagnosis, p. 41: *H. masoni*, F. E. S., from Andamans, 911 meters, redescribed, p. 8: *H. rapa*, n. sp., from Bay of Bengal, 1109 meters, pp. 9-11, pl. i, diagnosis, p. 41; SCHULZE (65).

*Lophophysema* n. g. of *Hyalonematidæ* for type *L. inflatum*, n. sp., from W. of Andamans, 911 meters; SCHULZE (65) pp. 19-23, pls. iv & v, diagnosis, pp. 42 & 43.

*Pheronema raphanus* F. E. S., fully described, from Andamans, 316-531 meters; SCHULZE (65) pp. 4-7, 2 figg.: figured by CHUN (8) p. 477.

*Poliopogon gigas*; MACMUNN (45) pp. 342-344.

†*Pyritonema*, genus defined; ZITTEL (82) p. 55.

"*Semperella*, n. sp.", figured; CHUN (8) pp. 478 & 479.

## Extinct Families of LYSSACINA.

### Family PROTOSPONGIDÆ.

Family defined; ZITTEL (82) p. 55: list of genera; MINCHIN (47) p. 123.

†*Protospongia*, sp.; PEACH & HORNE (50) pp. 668, 708. +*P. rhenana* Schlüt., is a Dictyosponge of uncertain position; HALL & CLARKE (20) p. 68.

### Family DICTYOSPONGIDÆ.

Definition of the family, p. 29; structure, pp. 29-41; affinities, pp. 22-29; bibliography, pp. 41-51; classification, with seven sub-families, pp. 52 & 53; synoptic list of genera and species, pp. 54-57; distribution, pp. 58-62; [the generic name *Dictyophyton* Hall 1863, is abolished on the ground that it was given under the erroneous supposition that these organisms were plants; the species of *Dictyophyton* are scattered amongst various genera new and old, the type sp. *D. newberryi* Hall, being placed under *Thammodictya* Hall; see also HINDE in review]: HALL & CLARKE (20): family defined; ZITTEL (82) p. 55.

(i) *Dictyospongiæ*, n. sub-fam. for genera *Dictyospongia*, (?) *Lyssacinnella*, *Hydriodictya*, *Prismodictya*, *Gongylospongia*, *Hydnoceras*, (?) *Tylodictya*, *Helicodictya*, *Rhabdosipongia*, *Ceratodictya*, *Clathrospongia*, *Lebedictya*, *Lyrodictya*, (?) *Mastodictya*, and *Botryodictya*, defined; HALL & CLARKE (20) p. 52.

†*Botryodictya* n. g. for *Dictyophyton ramosum* Lesquereux, defined, p. 111; *B.* (or *Tylodictya*) sp. [sic], p. 114; *B. ramosa* Lesq., pp. 111-114, pl. xiii, figg. 1-8; both from Devonian, New York: HALL & CLARKE (20).

- †*Ceratodictya*, n. g., defined, p. 117; type species *C. annulata* (*Dictyophyton annulatum* Hall), Devonian, N. America, redescribed, p. 120, pl. xxii, figg. 3-6; *C. centeta*, n. sp., Devonian, New York, pp. 120 & 121, pl. xli, figg. 1-5; *C. carpenteriana*, n. sp., Devonian, N. America, pp. 117 & 118, pl. xlii, fig. 1, pl. xliii, figg. 1-3; *C. cincta* Hall, redescribed, Devonian, Pennsylvania, pp. 118 & 119, pl. xxii, figg. 7-9; *C. zonata*, n. sp., Devonian, Pennsylvania, p. 119, pl. xli, fig. 6; HALL & CLARKE (20).
- †*Ceratodictya annulata* Hall; WHITFIELD & HOVEY (76) p. 190.
- †*Clathrosporgia* Hall; genus defined, pp. 121 & 122; type species *C. abacus* Hall, Carboniferous, Pennsylvania, redescribed, p. 153, pl. xlix, figg. 5-8; *C. caprodonta*, n. sp., Carboniferous, Ohio, p. 154, pl. l, figg. 8 & 9; *C. (?) desmia*, n. sp., Devonian, New York, p. 125, pl. xxv, fig. 3; *C. fenestrata* Hall, Devonian, New York, redescribed, pp. 122 & 123, pl. xiv, fig. 2, pl. xxv, fig. 5; *C. (?) hamiltonensis* Hall, from Hamilton Shales, Canandaigua Lake, New York, redescribed, pp. 66 & 67, pl. xiv, fig. 1; *C. (?) irregularis* Hall, from Devonian, New York, redescribed, pp. 124 & 125, pl. xv, figg. 6 & 7; *C. (?) tomaculum* Hall, Devonian, New York, redescribed, pp. 123 & 124, pl. xviii, figg. 5 & 6, pl. xxi, fig. 11; *C. vascellum* Hall, Devonian, New York, redescribed, p. 123, pl. xxi, fig. 12, pl. xxv, fig. 4; HALL & CLARKE (20).
- †*Clathrosporgia fenestrata* Hall; WHITFIELD & HOVEY (76) p. 190.
- †*Dictyospongia*, n. g., defined with type species *D. sceptrum*, p. 72; *D. almondensis*, n. sp., from Chemung Group, Devonian, New York, pp. 76 & 77, pl. xliv, fig. 1, text-fig. 13; *D. (?) bacteria*, n. sp., from Chemung Group, Devonian, N. America, p. 77, pl. xxxviii, figg. 7 & 8; *D. charita*, n. sp., from Chemung Group, Devonian, New York, pp. 74 & 75, pl. xv, fig. 4; *D. cylindrica* Whitfield, Carboniferous, Indiana, redescribed, p. 166, pl. lv, fig. 3, pl. lxi, fig. 6, text-fig. 22; *D. danbyi* (McCoy), from Silurian, redescribed, pp. 63 & 64, text-fig. 10; *D. eumorpha*, n. sp., from Chemung Group, Devonian, New York, p. 75, pl. xv, figg. 1-3; *D. huplea*, n. sp., Portage Sandstones, New York (Devonian), p. 68, pl. xxxiii, fig. 1; *D. lophiura*, n. sp., from Chemung Group, Devonian, New York, p. 74, pl. xv, fig. 5; *D. marcella* Clarke, from horizon of Marcellus Shales, Hamilton Group, Livonia, New York, redescribed, pp. 65 & 66, pl. xli, figg. 8 & 9, text-fig. 11; *D. morini* Barrois, Devonian, Brittany, redescribed, p. 147, pl. xxvi, figg. 1 & 2; *D. (Mastodictya) osculata*, n. sp., Carboniferous, Indiana, pp. 167 & 168, pl. lvi, fig. 6, text-fig. 22; *D. sceptrum* Hall, from Chemung Group, Devonian, North America, redescribed, pp. 73 & 74, pl. xiv, figg. 3-6, pl. xv, figg. 8 & 9, pl. xvi, figg. 3 & 4, pl. xxvii, fig. 3, pl. xxxvi, fig. 7; *D. siraea*, n. sp., from Chemung Group, Devonian, New York, pp. 75 & 76, pl. xlii, figg. 4 & 5; *D. stylina*, n. sp., Carboniferous, Indiana, p. 167, pl. lvi, fig. 2; HALL & CLARKE (20).
- †*Gongylospongia*, n. g., defined, for type species *G. marshi*, n. sp., from Devonian, New York; HALL & CLARKE (20) pp. 92-95, text-fig. 14-17.
- †*Helicodictya*, n. g., defined, for type species *H. trypania*, p. 114; *H. (?) concordia*, n. sp., pp. 115 & 116, pl. xxvii, fig. 2; *H. (?) scio*, n. sp., p. 116, pl. xxvii, fig. 1; *H. trypania*, n. sp., pp. 114 & 115, pl. xxii, figg. 1 & 2; all from Devonian, New York: HALL & CLARKE (20).
- †*Hydnoceras* Conrad, defined, for type species *H. tuberosum* Conrad, p. 96; *H. sp.*, Devonian, New York, p. 111, pl. viii, fig. 3; *H. anthracis*, n. sp., Devonian, New York, pp. 109 & 110, pl. ii, fig. 8, pl. vi, figg. 1 & 2, pl. xxxiii, figg. 8 & 9; *H. avoca*, n. sp., Devonian, New York, pp. 103 & 104, pl. ii, figg. 1, 3, pl. ix, fig. 3, pl. x, fig. 1, pl. xi, fig. 1; *H. barroisi*, nom. nov. for *Dictyophyton tuberosum* Barrois, Devonian, Brittany, redescribed, pp. 147 & 148, pl. xlvii, figg. 3 & 4; *H. bathense*, n. sp., from Devonian, New York, p. 102, pl. i.

- fig. 3, pl. viii, fig. 4, pl. ix, fig. 1; *H. botrædema*, n. sp., Devonian, New York, pp. 102 & 103, pl. ii, fig. 4; *H. eumeces*, n. sp., Devonian, New York, pp. 110 & 111, pl. xii, figg. 1-3; *H. eutheles*, n. sp., from Portage and Chemung Groups, Devonian, N. America, p. 70 and pp. 105 & 106, pl. viii, figg. 5 & 6, and pl. xxxiii, fig. 7; *H. gracile*, n. sp., from Portage Sandstone, New York, pp. 70 & 71, pl. xxxiii, figg. 3 & 4; *H. hypastrum*, n. sp., Devonian, New York, p. 105, pl. vii, fig. 1; *H. jaumontense*, n. sp., Devonian, Brittany, pp. 148 & 149, pl. xli, figg. 5 & 6; *H. legatum*, n. sp., from Portage Group, N. America, pp. 69 & 70, pl. xxxiii, figg. 5 & 6; *H. lutheri*, n. sp., Devonian, New York, pp. 107 & 108, pl. viii, figg. 7-10; *H. multinodosum*, n. sp., Devonian, New York, p. 106, pl. xxxix, fig. 1; *H. nodosum* Hall, from Devonian, New York, p. 109, pl. ii, fig. 2; *H. phymatoides*, n. sp., Devonian, New York, pp. 104 & 105, pl. vi, figg. 4 & 5, pl. xxxvii, fig. 3; *H. rhopalum*, n. sp., Devonian, New York, pp. 107 & 108, pl. xxxvii, figg. 1 & 2; *H. tuberosum*, Conrad, from Devonian, redescribed, pp. 97-101, pl. ii, figg. 5-7, pl. iii, figg. 1, 2, 4, pl. iv, figg. 2-4, pl. v, figg. 3 & 4, pl. vi, fig. 3, pl. vii, figg. 2 & 3, pl. viii, figg. 1 & 2, pl. xxxviii, figg. 1 & 2; *H. tuberosum*, var. *glossema*, n. var., p. 101, pl. vii, figg. 4 & 5, pl. ix, fig. 2; *H. variabile*, n. sp., Devonian, New York, pp. 108 & 109, pl. xxxvi, fig. 1, pl. xxxvii, figg. 4-6: HALL & CLARKE (20).
- +*Hydnoceras nodosum* Hall, and +*H. tuberosum* Conrad; WHITEFIELD & HOVEY (76) p. 192.
- +*Hydriodictya*, n. g., defined, with type species *Dictyophyton patulum* Hall, p. 77; *H. cylinx*, n. sp., pp. 78 & 79, pl. v, figg. 1 & 2, pl. xvi, fig. 2, pl. lv, fig. 7; *H. nephelia*, n. sp., p. 79, pl. xxi, fig. 10; *H. patula* Hall, redescribed, p. 78, pl. iv, fig. 1; all from Chemung Group, Devonian, New York: HALL & CLARKE (20).
- +*Lebedictya*, n. g., defined, p. 169; type species *L. crinita*, n. sp., Carboniferous, Indiana, pp. 169 & 170, pl. lviii, figg. 1 & 2, pl. lix, figg. 1 & 2, pl. lxi, fig. 5; HALL & CLARKE (20).
- +*Lyrodictya* Hall, genus defined, type *L. romingeri*, p. 170; *L. (?) burlingtonensis* Hall, Carboniferous, Iowa, redescribed, pp. 165 & 166, pl. liii, fig. 6; *L. romingeri* Hall, Carboniferous, Indiana, redescribed, pp. 170-172, pl. lvi, fig. 1, text-fig. 25: HALL & CLARKE (20).
- +*Lysactinella gebhardi* Girty and +*L. perelegans* Girty from Devonian; HALL & CLARKE (20) pp. 64 & 65: SCHUCHERT (58) p. 278.
- +*Mustodictya*, n. g., suggested for *Dictyospongia osculata*, q.v.; HALL & CLARKE (20), pp. 167 & 310.
- +*Prismodictya*, n. g., defined, for type species *Dictyophyton telum* Hall, p. 79; *P. allegania*, n. sp., pp. 84 & 85, pl. xx, fig. 4; *P. amicitiae*, n. sp., pp. 87 & 88, pl. xxxvi, figg. 2-4; *P. antophua*, n. sp., p. 88, pl. xx, figg. 7 & 8, pl. xxxiv, figg. 4 & 5, pl. xli, fig. 7; *P. baculum* Hall, redescribed, pp. 81 & 82, pl. xviii, figg. 1-3; *P. banana*, n. sp., p. 87, pl. xvii, fig. 2; *P. cercidea* n. sp., p. 89, pl. xx, figg. 1-3, pl. xlii, fig. 3; *P. choaneus*, n. sp., p. 85, pl. xix, figg. 1-3, pl. xxvii, fig. 5, pl. xxxv, fig. 6; *P. cithara*, n. sp., p. 90, pl. xxxv, figg. 1-3, pl. xxxvi, fig. 5; *P. conradi* Hall, redescribed, pp. 91 & 92, pl. xviii, fig. 4, pl. xix, figg. 5 & 6; *P. corymbia*, n. sp., p. 86, pl. xvii, fig. 11; *P. filitextilis* Hall, redescribed, pp. 86 & 87, pl. xxi, fig. 7, pl. xxvii, fig. 4; *P. narthecia*, n. sp., p. 90, pl. xxxv, figg. 4 & 5; *P. palæa*, n. sp., p. 69, pl. xxxiii, fig. 2; *P. parallela* Hall, redescribed, pp. 82 & 83, pl. xix, fig. 4, pl. xx, fig. 6, pl. xxi, figg. 8 & 9, pl. xxxv, fig. 9; *P. polyhedra*, n. sp., pp. 168 & 169, pl. lv, figg. 1 & 2; *P. prismatica* Hall, redescribed, pp. 83 & 84, pl. xvii, fig. 1, pl. xxi, figg. 1-6, pl. xlii, fig. 6; *P. ptionia*, n. sp., pp. 88 & 89, pl. xxxiv, fig. 3; *P. spectabilis*, n. sp., p. 82, pl. xx, fig. 5; *P. telum* Hall, p. 80, pl. xvii, figg. 3-10, pl. xxxv, figg. 7 & 8, pl. xlii, fig. 2; all from Devonian, N. America: HALL & CLARKE (20).



- +*P. filitextilis* Hall and +*P. parallela* Hall; WHITFIELD & HOVEY (2) p. 192.
- +*Rhabdospongia*, n. g., defined, p. 116; type species *R. (Dictyophyton) amalthaea* Hall, redescribed, from Devonian, Pennsylvania, pp. 116, pl. xvi, fig. 1; *R. condroziana*, n. sp., from Devonian, Brittany, pp. 149 & 150, pl. xlvii, figg. 1 & 2: HALL & CLARKE (20).
- +*Tylodictya*, n. g. defined, with type species *P. warrenensis*, p. 151; *T. (?) tenuis* Hall, pp. 152 & 153, pl. liii, figg. 4 & 5; *T. warrenensis*, n. sp., pp. 151 & 152, text-figg. 18–20; both from Carboniferous, Waverley Sandstone, Pennsylvania: HALL & CLARKE (20).
- (ii) *Thysanodictyiinae*, n. sub-fam. for genera *Thysanodictya*, *Arystidictya*, *Phragmodictya*, (?) *Griphodictya*, and *Achlaodictya*, defined; HALL & CLARKE (20) p. 52.
- +*Achlaodictya*, n. g., defined, with type *A. marsipus*, p. 177; *A. (?) eccentrica* Hall, p. 179, pl. liv, figg. 1 & 2; *A. marsipus*, n. sp., pp. 178 & 179, pl. lv, figg. 4 & 5, pl. lx, figg. 3–5, pl. lxi, figg. 1–3, pl. lxxviii, figg. 7 & 8, text-figg. 31 & 32; both from Carboniferous, Indiana: HALL & CLARKE (20).
- +*Arystidictya*, n. g., defined, p. 136; type species *A. elegans*, n. sp., pp. 136 & 137, pl. xli, fig. 10, pl. xlii, fig. 7; *A. nodifera*, n. sp., p. 137, pl. xli, fig. 11; both from Devonian (Chemung Group), New York: HALL & CLARKE (20).
- +*Griphodictya*, n. g., defined, with type species *G. epiphanes*, n. sp., Carboniferous, Indiana; HALL & CLARKE (20) pp. 179–181, pl. lv, fig. 6, text-fig. 63.
- +*Phragmodictya* Hall, defined, p. 172; type species, *P. catilliformis* Whitfield, pp. 173–176, pl. lxiv, figg. 1–5, pl. lxxv, figg. 1 & 2, pl. lxxvi, figg. 1–9, pl. lxxvii, figg. 1–4, pl. lxxviii, figg. 1–4, text-figg. 26–30; *P. (?) crebriata* Hall, p. 176, pl. lxi, fig. 4; *P. (?) lineata* Hall, pp. 176 & 177, pl. lxxviii, fig. 5; *P. patelliformis* Hall, p. 176, pl. lxxv, fig. 3; all from Carboniferous, Indiana: HALL & CLARKE (20).
- +*Thysanodictya*, n. g., defined, with type species *Dictyophyton halli* Hall, p. 125; *T. apleta*, n. sp., Devonian, N. America, p. 135, pl. xxvi, fig. 1, pl. xxvii, fig. 8; *T. edwin-halli*, nom. nov. for *Dictyophyton halli* Hall, Devonian, New York, redescribed, pp. 126 & 127, pl. xxiv, figg. 1–9; *T. expansa* Hall, Devonian, Pennsylvania, redescribed, pp. 154 & 155, pl. liii, fig. 3; *T. hermenia*, n. sp., Devonian, New York, pp. 133 & 134, pl. xxvii, fig. 7, pl. xxix, fig. 2, pl. xl, figg. 1–3; *T. johnstoni*, n. sp., Devonian, New York, pp. 130 & 131, pl. xxxiii, figg. 7 & 8; *T. poecilus*, n. sp., Devonian, New York, pp. 127 & 128, pl. xxiv, figg. 10 & 11; *T. quasillum*, n. sp., Devonian, N. America, pp. 131 & 132, pl. xxxviii, figg. 3 & 4; *T. randalli* Hall, Devonian, Pennsylvania, redescribed, pp. 129 & 130, pl. xxiv, fig. 12; *T. rudis* Hall, Devonian, N. America, redescribed, pp. 128 & 129, pl. xix, fig. 7, pl. xxxiii, figg. 1–6; *T. saocus*, n. sp., Devonian, New York, p. 130, pl. xxv, figg. 1 & 2; *T. scyphina*, n. sp., Devonian, New York, p. 132, pl. xlii, fig. 8; *T. turricula*, n. sp., Devonian, New York, pp. 135 & 136, pl. xxxviii, figg. 5 & 6: HALL & CLARKE (20).
- (iii) *Calathospongiinae*, n. sub-fam., for genera *Culathospongia*, *Thamnoidictya*, *Clepeydrospongia*, and *Cleodictya*, defined; HALL & CLARKE (20) p. 53.
- +*Calathospongia*, n. g., defined, type species *Dictyophyton redfieldi* Hall, p. 155; *C. amphorina*, n. sp., Carboniferous, Indiana, p. 182, pl. lxxviii, fig. 6; *C. carceralis*, n. sp., Carboniferous, Ohio and Indiana, p. 157, pl. li, figg. 2–4, pl. lii, figg. 2 & 3, pl. lx figg. 1 & 2; *C. carlli*, n. sp., Carboniferous, Pennsylvania, pp. 157 & 158, pl. lii, figg. 4 & 5, pl. lx figg. 3 & 4, pl. lxxviii, figg. 9 & 10, pl. lxxviii, figg. 11 & 12, pl. lxxviii, figg. 13 & 14, pl. lxxviii, figg. 15 & 16, pl. lxxviii, figg. 17 & 18, pl. lxxviii, figg. 19 & 20, pl. lxxviii, figg. 21 & 22, pl. lxxviii, figg. 23 & 24, pl. lxxviii, figg. 25 & 26, pl. lxxviii, figg. 27 & 28, pl. lxxviii, figg. 29 & 30, pl. lxxviii, figg. 31 & 32, pl. lxxviii, figg. 33 & 34, pl. lxxviii, figg. 35 & 36, pl. lxxviii, figg. 37 & 38, pl. lxxviii, figg. 39 & 40, pl. lxxviii, figg. 41 & 42, pl. lxxviii, figg. 43 & 44, pl. lxxviii, figg. 45 & 46, pl. lxxviii, figg. 47 & 48, pl. lxxviii, figg. 49 & 50, pl. lxxviii, figg. 51 & 52, pl. lxxviii, figg. 53 & 54, pl. lxxviii, figg. 55 & 56, pl. lxxviii, figg. 57 & 58, pl. lxxviii, figg. 59 & 60, pl. lxxviii, figg. 61 & 62, pl. lxxviii, figg. 63 & 64, pl. lxxviii, figg. 65 & 66, pl. lxxviii, figg. 67 & 68, pl. lxxviii, figg. 69 & 70, pl. lxxviii, figg. 71 & 72, pl. lxxviii, figg. 73 & 74, pl. lxxviii, figg. 75 & 76, pl. lxxviii, figg. 77 & 78, pl. lxxviii, figg. 79 & 80, pl. lxxviii, figg. 81 & 82, pl. lxxviii, figg. 83 & 84, pl. lxxviii, figg. 85 & 86, pl. lxxviii, figg. 87 & 88, pl. lxxviii, figg. 89 & 90, pl. lxxviii, figg. 91 & 92, pl. lxxviii, figg. 93 & 94, pl. lxxviii, figg. 95 & 96, pl. lxxviii, figg. 97 & 98, pl. lxxviii, figg. 99 & 100, pl. lxxviii, figg. 101 & 102, pl. lxxviii, figg. 103 & 104, pl. lxxviii, figg. 105 & 106, pl. lxxviii, figg. 107 & 108, pl. lxxviii, figg. 109 & 110, pl. lxxviii, figg. 111 & 112, pl. lxxviii, figg. 113 & 114, pl. lxxviii, figg. 115 & 116, pl. lxxviii, figg. 117 & 118, pl. lxxviii, figg. 119 & 120, pl. lxxviii, figg. 121 & 122, pl. lxxviii, figg. 123 & 124, pl. lxxviii, figg. 125 & 126, pl. lxxviii, figg. 127 & 128, pl. lxxviii, figg. 129 & 130, pl. lxxviii, figg. 131 & 132, pl. lxxviii, figg. 133 & 134, pl. lxxviii, figg. 135 & 136, pl. lxxviii, figg. 137 & 138, pl. lxxviii, figg. 139 & 140, pl. lxxviii, figg. 141 & 142, pl. lxxviii, figg. 143 & 144, pl. lxxviii, figg. 145 & 146, pl. lxxviii, figg. 147 & 148, pl. lxxviii, figg. 149 & 150, pl. lxxviii, figg. 151 & 152, pl. lxxviii, figg. 153 & 154, pl. lxxviii, figg. 155 & 156, pl. lxxviii, figg. 157 & 158, pl. lxxviii, figg. 159 & 160, pl. lxxviii, figg. 161 & 162, pl. lxxviii, figg. 163 & 164, pl. lxxviii, figg. 165 & 166, pl. lxxviii, figg. 167 & 168, pl. lxxviii, figg. 169 & 170, pl. lxxviii, figg. 171 & 172, pl. lxxviii, figg. 173 & 174, pl. lxxviii, figg. 175 & 176, pl. lxxviii, figg. 177 & 178, pl. lxxviii, figg. 179 & 180, pl. lxxviii, figg. 181 & 182, pl. lxxviii, figg. 183 & 184, pl. lxxviii, figg. 185 & 186, pl. lxxviii, figg. 187 & 188, pl. lxxviii, figg. 189 & 190, pl. lxxviii, figg. 191 & 192, pl. lxxviii, figg. 193 & 194, pl. lxxviii, figg. 195 & 196, pl. lxxviii, figg. 197 & 198, pl. lxxviii, figg

- 21; *C. magnifica*, n. sp., Carboniferous, Indiana, pp. 182 & 183, pl. lvi, fig. 5, pl. lvii, fig. 1; *C. redfieldi* Hall, Carboniferous, Ohio and Pennsylvania, pp. 155 & 156, pl. xlviii, figg. 1 & 2, pl. xlix, figg. 1-4; *C. (?) sacculus* Hall, Carboniferous, Ohio, redescribed, p. 160, pl. l, fig. 7; *C. tiffanyi*, n. sp., Carboniferous, Ohio, pp. 158-160, pl. li, figg. 5 & 6: HALL & CLARKE (20).
- †*Cleodictya* Hall, defined, with type *C. gloriosa*, p. 163; *C. claypolei*, n. sp., Carboniferous, Ohio, p. 163, pl. li, fig. 1; *C. gloriosa* Hall, Carboniferous, Indiana, redescribed, pp. 183 & 184, pl. lxix, fig. 1, pl. lxx, figg. 1 & 2; *C. mohri* Hall, Carboniferous, Indiana, redescribed, pp. 184-187, pl. lxx, fig. 3, text-figg. 34-37: HALL & CLARKE (20).
- †*Clepsydrosporgia*, n. g. for type species *C. matutina*, n. sp. from Portage Sandstones, Devonian, New York; HALL & CLARKE (20) pp. 71 & 72, pl. xxxiv, figg. 1 & 2.
- †*Thamnodictya* Hall, defined, pp. 160 & 161; type species *T. (Dictyophyton) newberryi* Hall, pp. 161 & 162, pl. l, figg. 1-6, pl. lii, fig. 1; *T. ortonii*, n. sp., pp. 162 & 163, pl. liii, figg. 1 & 2; both from Carboniferous, Ohio; HALL & CLARKE (20).
- (iv) *Physospongiinae*, n. sub-fam. for genera *Physospongia* and *Roemerispongia*, defined; HALL & CLARKE (20) p. 53.
- †*Physospongia* Hall, defined, pp. 187-189; *P. alternata* Hall, redescribed, p. 195, pl. lxii, fig. 11; *P. colletti* Hall, redescribed, pp. 193-195, pl. lxiii, figg. 1-7, text-figg. 43 & 44; *P. dawsoni* Whitfield, pp. 189-193, pl. lxii, figg. 1-10, text-figg. 38-42; *P. multibursaria*, n. sp., pp. 196 & 197, pl. lxi, fig. 7, text-fig. 45; all from Carboniferous, Indiana: HALL & CLARKE (20).
- †*Roemerispongia*, n. g., defined, with genotype *R. (Dictyophyton) gerolatinensis* Roemer; HALL & CLARKE (20) p. 67, text-fig. 12.
- (v) *Hyphanteniinae*, n. sub-fam. for genus *Hyphantenia*, defined; HALL & CLARKE (20) p. 53.
- †*Hyphantenia*, nom. nov. for *Uphantenia* Vanuxem, defined, pp. 137-139; type species *H. chemungensis* Van., Devonian, New York, redescribed, pp. 139 & 140, pl. xxviii, figg. 1 & 2, pl. xxix, fig. 1, pl. xlv, fig. 1; HALL & CLARKE (20).
- (vi) *Hallodictyinae*, n. sub-fam. for genera *Hallodictya*, *Actinodictya* and *Cryptodictya*, defined; HALL & CLARKE (20) p. 53.
- †*Actinodictya* Hall, defined, pp. 142 & 143; type species *A. placenta* Hall, Devonian, New York, redescribed, p. 143, pl. xxx, figg. 1-3, pl. xxxi, figg. 1 & 2; HALL & CLARKE (20).
- †*Cryptodictya* Hall, defined, for type species *C. alleni* Hall, Devonian, New York, redescribed; HALL & CLARKE (20) pp. 144 & 145, pl. xxxi, figg. 3-5, pl. xxxii, figg. 1-4.
- †*Hallodictya*, n. g. defined, with type species *H. sciensis*, p. 140; *H. cottoniana*, n. sp., Devonian, New York, p. 142, pl. xli, fig. 12; *H. sciensis*, n. sp., Devonian, Allegany County, pp. 140 & 141, pl. xxxvi, fig. 8; HALL & CLARKE (20).
- (vii) *Agolithodictyinae*, n. sub-fam. for genus *Agolithodictya*, defined; HALL & CLARKE (20) p. 53.
- †*Agolithodictya*, n. g. defined, with type species *A. nummulina*, n. sp., Devonian, Pennsylvania; HALL & CLARKE (20) pp. 145 & 146, pl. xxv, figg. 6-9.

## DICTYOSPONGIDÆ INCERTÆ SEDIS.

†*Dictyophyton*, sp.; WELLER (73) p. 69.

†*Etenodictya* Hall, defined, p. 164; type species *E. implexa* Hall, Carboniferous, Ohio, redescribed, pp. 164 & 165, pl. liv, fig. 3 & 4; HALL & CLARKE (20).

## Family PLECTOSPONGIDÆ.

List of genera; MINCHIN (47) p. 123: family defined; ZITTEL (82) p. 55.

†*Cyathodictya*, **nom. nov.** for *Cyathophycus*, p. 24 footnote, and p. 200; *C. reticulata* Walcott, from Utica Slate, New York, p. 24 footnote, and p. 200, pl. i, figg. 1-6: HALL & CLARKE (20).

†*Cyathophycus*, vide etiam *Cyathodictya* and *Sphaerodictya*.

†*Plectoderma scitulum* Hinde; PEACH & HORNE (50) p. 708.

†*Sphaerodictya*, **nom. nov.** for *Cyathophycus* seu *Teganium*; *S. sub-sphaerica* Walcott, Utica Slate, New York; HALL & CLARKE (20), p. 26 footnote, and p. 20, pl. i, figg. 14-22.

†*Teganium* Rauff, genus not accepted; HALL & CLARKE (20) p. 25 footnote.

## Family BRACHIOSPONGIDÆ.

*Brachiospongia* Marsh, genus defined; ZITTEL (82) p. 55.

## Family PATTERSONIDÆ.

*Pattersonia* Miller, genus defined; ZITTEL (82) p. 55.

## Family RECEPTACULITIDÆ.

†*Ischadites*, sp., and †*I. antiquus* Salt; PEACH & HORNE (50) pp. 668 & 686. †*I. iowaensis* Owen; SCHUCHERT (59) p. 153. †*I. kosnigi* Murch; PEACH & HORNE (50) pp. 668, 686, 708. †*I. squamifer* Hall; SCHUCHERT (58) p. 278.

†*Receptaculites*, **n. sp.**, from Helderbergian Fauna, New York; SCHUCHERT (58) p. 275. †*R.*, sp. [placed under Protozoa]; BURHENNE (6) p. 44. †*R. arcticus* Eth., compared with †*R. oweni*; SCHUCHERT (59) p. 253. †*R. australis* Salter, structure and localities; ETHERIDGE & DUN (14). †*R. devonicus* Whit.; BOWNOCKER (5) p. 20. †*R. infundibuliformis* Eaton; SCHUCHERT (58) p. 278. †*R. occidentalis* Salt. [classed amongst Protozoa]; BARLOW (3) pp. 122 & 298. †*R. oweni* Roem., from Lower Silurian of Baffin Land, described; SCHUCHERT (59) pp. 152 & 153. †*R. pearyi*, **n. sp.**, from Cape Harrison, Princess Marie Bay, Niagara (?) Group; WHITFIELD (75) pp. 19 & 20, pl. i, fig. 1: WHITFIELD & HOVEY (76) p. 350.

## Family AMPHISPONGIDÆ.

*Amphispongia oblonga* Salt., Silurian of Scotland; PEACH & HORNE (50) pp. 668 & 708.

## Family POLLAKIDÆ.

†*Hyalostelia* Z., genus defined; ZITTEL (82) p. 55. *H.* sp. and *H. (Hyalonema) fascicularis* McCoy; PEACH & HORNE (50) p. 668.

†*Spiractinella wrightii* Crtr., spicules ZITTEL (82) p. 56, fig. 69.

(ii) *DICTYONINA*.

Diagnosis, as sub-class, with orders *Uncinataria* and *Inermia*; MINCHIN (47) p. 123: definition and characters, as sub-order; ZITTEL (82) pp. 56 & 57.

## Order UNCINATARIA

Diagnosis; MINCHIN (47) p. 123.

## Sub-order CLAVULARIA.

Diagnosis; MINCHIN (47) p. 123.

## Family FARREIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 123.

*Farrea occa* Bwk., from Andamans, 238-458 meters, and from S.W. of Cape Comorin, 787 meters; SCHULZE (65) p. 38.

## Sub-order SCOPULARIA.

Diagnosis; MINCHIN (47), p. 123.

## Family EURETIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 124.

+*Sporadopyle* Z., genus defined; ZITTEL (82) p. 57.

+*Tremadictyon* Z., genus defined; *T. reticulatum* Goldf., figures of sponge and skeleton; ZITTEL (82) p. 57, fig. 73.

+*Verrucocœlia tubulata* T. Smith; ROWE (55) p. 360.

## Family CRATICULARIDÆ.

Family defined; ZITTEL (82) p. 57.

+*Craticularia*, genus defined, with figures of *C. paradoxa* Mnstr., and its skeleton; ZITTEL (82) p. 57, fig. 74. *C. sp.*; ZAHÁLKA (78) pp. 31 & 92. *C. fittoni*; ROWE (55) pp. 317 & 360. *C. subseriata* Roem.; ZAHÁLKA (79) pp. 35, 43-49. *C. vulgata* Poč.; ZAHÁLKA (78) p. 92.

## Family MELLITIONIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 124.

*Aphrocallistes* sp., figured; CHUN (8) p. 475. *A. beatrix* Gray, from Andamans, 362 meters and 434-541 meters, pp. 38 & 39; *A. bocagei* E. P. Wright, from Andamans and S.W. of Cape Comorin, 165-787 meters, pp. 39-41; SCHULZE (65). *A. vastus* F. E. S., from Arctic Seas, 565, 640 & 642 meters; SCHULZE (63) p. 108. *A. whiteavesianus* Lambe, distribution; LAMBE (32) p. 165.

## Family COSCINOPORIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 124: family defined; ZITTEL (82) p. 57.

*Chonelasma calyx* F. E. S., from Arctic Seas, 1053 meters; SCHULZE (63) p. 108.

*Coscinopora* Goldf., genus defined; ZITTEL (82) p. 58. +*C. sp.*, Cambro-Silurian; BARLOW (3) p. 121. +*C. infundibuliformis* Goldf.; ROWE (55) p. 360: figures of sponge and skeletal elements; ZITTEL (82)

- p. 58, fig. 75. †*C. macropora* Eaton; the type specimen is a specimen of *Polypora distans*, a Polyzoan; WHITFIELD & HOVEY (76) pp. 190 & 200.
- †*Guettardia stellata* Mich.; ROWE (55) pp. 317 & 360: ZAHÁLKA (79) p. 35. †*G. trilobata*; ZAHÁLKA (79) pp. 13 & 35.
- †*Leptophragma*, genus defined; ZITTEL (82) p. 58. *L. fragilis*; ZAHÁLKA (79) pp. 13, 35, 44. *L. murchisoni* Goldf.; ROWE (55) p. 36.
- †*Pleurostoma bohemicum* Z.; ZAHÁLKA (78) pp. 51, 62, 92, 100, 102: ZAHÁLKA (79) pp. 15, 25, 27, 29, 35. †*P. scyphus*; ZAHÁLKA (79) pp. 17 & 35: ŽELÍZKO (80) p. 16.

## Family TRETODICTYIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 124.

*Hexactinella*? sp. ?; macerated fragments of a dictyonine sponge, from the Island of Galli, near Amalfi; SCHULZE (61) pp. 2 & 3, pl. i, figg. 1-7. *H. grimaldii* Tops., figured; RICHARD (51) pl. ix, figg. 1 & 2.

## SCOPULARIA INCERTÆ SEDIS.

*Tretocalyx*, n. g. for *T. polæ*, n. sp., from Red Sea, 341-820 meters, a sponge belonging to the group Scopularia, but its family position uncertain for the present; SCHULZE (62) pp. 9-13, pl. iii.

## Order INERMIA.

Diagnosis; MINCHIN (47) p. 124.

## Family MÆANDROSPONGIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 124: definition of family; ZITTEL (82) p. 61.

*Aulocystis grayi* Bwk., Schulze, from Red Sea, 490-868 meters, pp. 1-9, pls. i & ii; *A. zitteli* Marsh & Meyer, type and other specimens re-described, pp. 5-8, pl. ii: SCHULZE (62).

†*Beckisia* Schlüt., genus defined, with figures of *B. sokelandi* Schlüt., and its skeleton; ZITTEL (82) p. 61, fig. 82.

†*Camerospongia* d'Orb., genus defined, with figure of *C. fungiiformis* Goldf.; ZITTEL (82) p. 61, fig. 83. *C. aperta* Hinde; *C. capitata*, T. Smith; *C. subrotunda* Mant.: ROWE (55) p. 361. *C. monostoma* Roem.; ZAHÁLKA (79) pp. 10 & 36.

†*Cyrtobolia formosa* Rss.; ZAHÁLKA (79) pp. 10 & 11. †*C. morchella* Rss.; ZAHÁLKA (79) p. 10.

†*Cystispongia* Roem., genus defined, with figure of *C. bursa* Quenst., and its skeleton; ZITTEL (82) p. 61, fig. 84. *C. verrucosa* Rss.; ZAHÁLKA (79), pp. 10, 15, 27, 29, 36.

†*Plocoscyphia* Rss., genus defined, with figure of *P. pertusa* Gein., and its skeletal elements; ZITTEL (82) p. 61, fig. 81. *P. convoluta* T. Smith; ROWE (55) p. 361. *P. labrosa* T. Smith; JUKES-BROWNE & HILL (25) p. 481: ROWE (55) p. 361: ZAHÁLKA (79) p. 10. *P. labyrinthica* Rss.; ZAHÁLKA (79) pp. 25 & 36.

†*Pyrospongia*, n. g. of *Mæandrospongiæ* allied to *Plocoscyphia*, p. 37, for *P. urbei*, n. sp., pp. 37-40, figg. 70-80, also pp. 10, 11, 15, 19, 29, 36; *P. čičkovicensis*, n. sp., pp. 40 & 41, figg. 83-85, also pp. 10 & 36; †*P. košticensis*, n. sp., p. 40, figg. 81 & 82, also pp. 11 & 36; from Cretaceous (Teplitz Horizon) of Bohemia: ZAHÁLKA (79).

†*Toulminia*, sp.; ROWE (55) p. 360.

†*Tremabolites-megastoma* Roem.; ZAHÁLKA (79) p. 36.

## Extinct Families of DICTYONINA.

## Family STAURODERMIDÆ.

- Family defined; ZITTEL (82), p. 58: list of genera; MINCHIN (47) p. 124.  
 †*Casearia* Quenst., genus defined; ZITTEL (82) p. 59.  
 †*Cypellia* Z., genus defined, with figures of *C. rugosa* Goldf., and its skeletal structure; ZITTEL (82) p. 58, fig. 76.  
 †*Eubrochus clausus* Soll.; JUKES-BROWNE & HILL (25) p. 480.  
 †*Ophrystoma ocellatum* Seeley, synonym †*Ventriculites cavatus* Sollas; JUKES-BROWNE & HILL (25) p. 481.  
 †*Placotrema cretaceum* Hinde; ROWE (55) p. 361.  
 †*Porospongia* d'Orb., genus defined, with figures of *P. impressa* Goldf., and its skeleton; ZITTEL (82) p. 59, fig. 77.  
 †*Stauroderma* Z., genus defined; ZITTEL (82) p. 59.

## Family CALLODICTYONIDÆ.

- List of genera; MINCHIN (47) p. 124.  
 †*Porochonia simplex* T. Smith; ROWE (55) p. 360.  
 †*Sklerokalia cunningtoni* Hinde; JUKES-BROWNE & HILL (25) p. 481.

## Family CÆLOPTYCHIDÆ.

- Definition of family and unique genus †*Cæloptychium*, with figures of *C. agaricoides* Goldf., and its skeleton; ZITTEL (82) p. 60, fig. 80.

## Family VENTRICULITIDÆ.

- Family defined; ZITTEL (82) p. 59: list of genera; MINCHIN (47) p. 125.  
 †*Cephalites* (?) sp. (?); ZAHÁLKA (79) p. 35. †*C. benettii* Mant.; JUKES-BROWNE & HILL (25) p. 480: ROWE (55) pp. 360 & 361. †*C. capitatus* Smith; JUKES-BROWNE & HILL (25) p. 480. †*C. catenifer* Smith; ROWE (55) p. 361. †*C. compressus* Smith; JUKES-BROWNE & HILL (25) p. 480. †*C. longitudinalis* Smith; JUKES-BROWNE & HILL (25) p. 480: ROWE (55) pp. 360 & 361.  
 †*Pachyteichisma* Z., genus defined, with figures of *P. carteri* Z., sponge and skeleton; ZITTEL (82) p. 59, fig. 78.  
 †*Polyblastidium racemosum* T. Smith; ROWE (55) p. 360.  
 †*Rhizopot(h)erion*, sp.; ŽELÍZKO (80) p. 7. †*R. cernicorne* Goldf.; ZAHÁLKA (78) pp. 28, 30, 31, 51, 92: ZAHÁLKA (79) pp. 44, 45, 48, 49.  
 †*Ventriculites*, reconstructed; MINCHIN (47) p. 16, fig. 23: genus defined; ZITTEL (82) p. 60. *V.* sp.; ZAHÁLKA (78) pp. 27, 60, 92: ZAHÁLKA (79) p. 15. *V. angustatus* Roem.; ZAHÁLKA (78) pp. 27, 51, 56, 78, 92: ZAHÁLKA (79) pp. 13, 15, 17, 22, 23, 25-27, 29, 35, 43, 46. *V. cavatus* Soll., a synonym of *Ophrystoma ocellatum* Seeley; JUKES-BROWNE & HILL (25) p. 481. *V. convolutus* Hinde; *V. cribrerosus* Phill.; *V. decurrens* Smith; *V. impressus* Smith; and *V. infundibuliformis* Woodw.: ROWE (55) p. 360. *V. mummularis* Smith; JUKES-BROWNE & HILL (25) p. 481: ROWE (55) p. 360. *V. marginatus*; ZAHÁLKA (79) pp. 11 & 36. *V. odontostoma* Rss.; ZAHÁLKA (79) pp. 43-48. *V.* (?) *quincuncialis* (?) Smith; JUKES-BROWNE & HILL (25) p. 481. *V. radiatus* Mant.; ROWE (55) p. 360: ZAHÁLKA (78) pp. 28, 30, 51, 80, 92: ZAHÁLKA (79) pp. 13, 17, 24, 27, 29, 36, 43. *V. striatus* Smith, figured; ZITTEL (82) p. 60, fig. 79. *V.* (?) *texturatus* (?) Goldf.; JUKES-BROWNE & HILL (25) p. 481. *V. zippei*; ZAHÁLKA (79) pp. 13 & 36.

## HEXACTINELLIDA INCERTÆ SEDIS (NOMINA NUDA).

"*Monorhaphis*, n. g. F. E. Schulze," figured; CHUN (8) p. 481.

"*Platylistrum platessa*, n. g., n. sp.," figured; CHUN (8) p. 480.

## D. DEMOSPONGIÆ.

*Demospongia*, classification, with list of orders, families and genera; MINCHIN (47) pp. 145-154.

(i) *TETRAXONIDA*.

Diagnosis; MINCHIN (47) p. 146.

## (a) Order CARNOSA.

Diagnosis; MINCHIN (47) p. 146.

## Sub-order MICROTRIÆNOSA.

Diagnosis; MINCHIN (47) p. 146.

*Dercitus* Gray, the genus to be placed in the family *Ancorinidæ* Z.; SCHRAMMEN (57) p. 9. + *D. primævus* Z., from Upper Senonian, re-described; SCHRAMMEN (57) p. 8, pl. ii, figg. 1-3. *D. simplex* Crtr., from Ternate, re-described; THIELE (68) pp. 20 & 21, pl. ii, fig. 1.

## Sub-order MICROSCLEROPHORA.

Diagnosis; MINCHIN (47) p. 147: criticism of the application of the name [vide II, B (iv) (c)]; THIELE (68) p. 64.

## Family CORTICIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 147.

*Corticium candelabrum* O. S., from Funafuti, 50-70 fathoms; KIRKPATRICK (28) p. 349.

## Family PLAKINIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 147.

*Orthorhachis problematica* Sollas, probably a species of *Placinolopha*; KIRKPATRICK (28) p. 350.

*Placinastrella clathrata*, n. sp., from Funafuti; KIRKPATRICK (28) pp. 350 & 351, pl. xiii, fig. 3, a-o.

*Placinolopha spinosa*, n. sp., from Funafuti, 50-70 fathoms; KIRKPATRICK (28) p. 350. pl. xiii, fig. 2, a-m.

## Sub-order OLIGOSILICINA.

Diagnosis of sub-order; MINCHIN (47) p. 147: to be removed from the order Carnosa, as defined by Topsent, and placed as *Chondrosiina*, a sub-family, including the genera *Chondrilla* and *Chondrosia*, allied to *Tethya*; THIELE (68) pp. 64 & 65. [*Oligosilicina*, sens. Keller, vide *Halichondrina*.]

## Family CHONDROSIDÆ.

List of genera; MINCHIN (47) p. 147.

*Chondrilla*, the genus derived from *Tethya* by loss of monaxons, p. 65;

*C. distincta* F. E. S., from Ternate, p. 67, pl. iii, fig. 20; *C. grandistellata*, n. sp., from Ternate, p. 65, pl. iii, fig. 18: THIELE (68). *C. mixta* F. E. S., from Funafuti; KIRKPATRICK (28) p. 349. *C. nucula* O. S., specimen wrongly identified by Kieschnick [(24) Zool. Rec. 1896]; it does not occur in the collection; THIELE (68) p. 56. *C. nuda* Lend., from Christmas Island; KIRKPATRICK (27) p. 130. *C. ternatensis*, n. sp., from Ternate; THIELE (68) pp. 65-67, pl. iii, fig. 19.

†*Chondrillopsis asterias*; ZAHÁLKA (78) p. 80, p. 92.

*Chondrosia*, the genus derived from *Chondrilla* by complete loss of spicules, p. 65; *C. corticata*, n. sp., from Ternate, pp. 67 & 68, pl. iii, fig. 21; *C. debilis*, n. sp., from Ternate, allied to *C. reniformis*, pp. 68 & 69: THIELE (68). *C. plebeja* O. S., and *C. reniformis* Ndo., from Christmas Island, general distribution given; KIRKPATRICK (27) pp. 129 & 130.

### (b) Order TETRACTINELLIDA.

Diagnosis, as order; MINCHIN (47) p. 147: written *Tetractinellina*, as sub-order of order *Tetrazonida*; THIELE (68) p. 20.

### (1) Sub-order CHORISTIDA.

Diagnosis of sub-order; MINCHIN (47) 147.

### Tribe SIGMATOPHORA.

Diagnosis; MINCHIN (47) p. 147.

### Family TETILLIDÆ.

Characters of family; KIESCHNICK (26) p. 555: diagnosis of family and list of genera; MINCHIN (47) p. 147.

*Craniella cranium* O. F. M., from Hudson Bay, 20-30 fathoms; LAMBE (30) p. 378 and (31) p. 26: distribution; LAMBE (32) p. 164. †*C. logani* Dawson, similarity of spicules to those of *C. cranium*; LAMBE (30) p. 278. *C. spinosa* Lambe, and *C. villosa* Lambe, distribution; LAMBE (32) p. 164.

*Tetilla* O. S., diagnosis and history of genus; KIESCHNICK (26) pp. 555 & 556. *T. amboinensis*, n. sp.; KIESCHNICK (26) pp. 556-558, pl. xlv, figg. 1-7: identical with *T. bacca* Sel.; THIELE (68) p. 39. *T. australiensis* Carter, includes *T. ternatensis* Lindgren nec Kieschnick; THIELE (68) pp. 39 & 40. *T. bacca* Selenka, from Christmas Island; KIRKPATRICK (27) p. 132: includes *T. amboinensis* Kieschnick, *T. rubra* Kieschnick, *T. ternatensis* Kieschnick nec Lindgren, *T. merguensis* Sollas, and *T. violacea* Kieschnick; THIELE (68) pp. 39 & 40. *T. rubra*, n. sp.; KIESCHNICK (26) pp. 560-562, pl. xlv, figg. 23-29: identical with *T. bacca* Sel.; THIELE (68) p. 39. *T. schulzei*, n. sp.; KIESCHNICK (26) pp. 562 & 563, pl. xlv, figg. 16-22. *T. ternatensis* Kieschnick, from Christmas Island; KIRKPATRICK (27) p. 132: a synonym of *T. bacca* Sel., but *T. ternatensis* Lindgren is a synonym of *T. australiensis* Carter; THIELE (68) pp. 39 & 40. *T. violacea*, n. sp., KIESCHNICK (26) pp. 559 & 560, pl. xlv, figg. 8-15: identical with *T. bacca* Sel.; THIELE (68) p. 39.

### Tribe ASTROPHORA.

Diagnosis; MINCHIN (47) p. 147.



## Family THENEIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 147.

*Thenea muricata* Bwk., from East Greenland, 250 fathoms; LAMBE (31) pp. 26 & 27: complete distribution; LAMBE (32) p. 164: figured; MINCHIN (47) p. 17, fig. 24.

## Family PACHASTRELLIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 147.

*Characella sollasi* Tops., figured; RICHARD (51) pl. ix, fig. 3.

## Family STELLETTIDÆ.

Diagnosis of family and of sub-families *Homasterina*, *Euasterina*, *Sanidasterina*, and *Rhabdasterina*, and list of genera; MINCHIN (47) p. 148; characters of the family; KIESCHNICK (26) p. 578.

*Ancorina*, vide etiam *Ecionema*: "*A. aaptos*" O. S., identical with *Tuberella tethyoides* Keller, hence name of the species *Tuberella aaptos*, q. v.; TOPSENT (70) pp. 286-288. *A. simplex* Lend. a synonym of *Ecionema bacilliferum*; KIRKPATRICK (27) p. 131.

*Astellia tuberosa* Tops., figured; RICHARD (51) pl. ix, fig. 4.

*Ecionema* Bwk., the name should be written *Ecionemia*: the application and affinities of the genus discussed, especially the question of its distinctness from *Ancorina*, pp. 28-30; *E. sp.* from Ternate, pp. 35 & 36, pl. ii, fig. 10; THIELE (68). *E. bacilliferum* Crtr., from Christmas Island, includes *Ancorina simplex* Lend.; KIRKPATRICK (27) p. 131. *E. cinerea*, n. sp., from Ternate, pp. 32-34, pl. ii, fig. 8; *E. cribrosa*, n. sp., from Ternate, perhaps = *Stelletta truncata* Kieschnick, pp. 31 & 32, pl. ii, fig. 7; *E. nigrescens*, n. sp., from Ternate, perhaps identical with *Stelletta lobata* Kieschnick, q. v., p. 31, and pp. 34 & 35, pl. ii, fig. 9; THIELE (68).

*Penares* Gray, application of the generic name discussed, pp. 21 & 22; *P. sollasi*, n. sp., from Ternate, pp. 22 & 23, pl. ii, fig. 2: THIELE (68).

*Psammastra* Soll., application and affinities of genus discussed, p. 37; *P. conulosa* Kieschnick, from Ternate; Kieschnick's diagnosis and description corrected and the sponge redescribed, pp. 36-39, pl. ii, figg. 11 & 12: THIELE (68).

*Stelletta*, diagnosis of genus; KIESCHNICK (26) pp. 550 & 578. *S. (Piloclota) brunnea*, n. sp., from Ternate; THIELE (68) pp. 24 & 25, pl. ii, fig. 3. *S. clavosa* Ridl., redescribed; KIESCHNICK (26) pp. 554 & 555. *S. (Myriastrea) debilis*, n. sp., from Ternate; THIELE (68) pp. 25 & 26, pl. ii, fig. 4. †*S. inclusa* Hinde; ROWE (55) p. 359. *S. lobata*, n. sp.; KIESCHNICK (26) pp. 550 & 551, pl. xlv, figg. 30-37: perhaps identical with *Ecionemia nigrescens*; THIELE (68) p. 31. *S. reniformis*, n. sp.; KIESCHNICK (26) pp. 551-553, pl. xlv, fig. 1, pl. xlv, figg. 38-46. *S. simplicifurca* (Soll.), from Christmas Island; KIRKPATRICK (26) p. 131. *S. (Myriastrea) ternatensis*, n. sp., from Ternate; THIELE (68) pp. 26 & 27, pl. ii, fig. 5. *S. truncata*, n. sp.; KIESCHNICK (26) pp. 553 & 554: perhaps identical with *Ecionemia cribrosa*; THIELE (68) p. 31. *S. (Anthastrea) variohamata*, n. sp., from Ternate; THIELE (68) pp. 27 & 28, pl. ii, fig. 6.

†*Stolleya*, n. g. of *Ancorinida*, diagnosis, p. 7; *S. microtulipa*, n. sp., p. 7, pl. iii, fig. 3; *S. ornatissima*, n. sp., p. 7, pl. i, fig. 4, pl. iii, fig. 5, from Upper Senonian: SCHRAMMEN (57).

†*Tethyopsis* Zittel non Stewart, a genus of *Ancorinida* Z.; SCHRAMMEN (57), p. 9. *T. steinmanni* described from Upper Senonian; SCHRAMMEN (57) p. 8: figured, ZITTEL (82) p. 46, fig. 52.

## Family GEODIDÆ.

Diagnosis of family, and of subfamilies *Erylina* and *Geodina*, with list of genera; MINCHIN (47) p. 148.

*Cydonium mulleri* Flem., distribution; LAMBE (32) p. 164. *C. sphaeroides* Kieschnick, is a *Geodia*; THIELE (68) p. 40.

*Erylus inequalis* Kieschnick [(24) Zool. Rec. 1896], the type specimen does not exist, and the name was given in error and becomes a *nomen nudum*; THIELE (68) pp. 47 & 48. *E. monticularis*, n. sp., from Funafuti; KIRKPATRICK (28) pp. 351 & 352, pl. xiv, fig. 3, a-h. *E. nobilis*, n. sp., from Ternate; THIELE (68) pp. 48 & 49, pl. ii, fig. 17.

*Geodia berryi* Sollas, = *G. cydonium*, var. *berryi* Lindgren, from Ternate; THIELE (68) p. 43. †*G. cretacea*, n. sp., from Upper Senonian; SCHRAMMEN (57) pp. 8 & 9, pl. iii, fig. 1. †*G. gigantea* Poč.; ZAHÁLKA (78) pp. 67, 77, 78, 92. *G. kikenthali*, n. sp., for a specimen from Ternate, identified by Kieschnick [(24) Zool. Rec. 1896] as *G. glariosum* Soll.; THIELE (68) pp. 43-45, pl. ii, fig. 15. *G. sphaeroides* for *Cydonium sphaeroides* Kieschnick, from Ternate; THIELE (68) pp. 41 & 42, pl. ii, fig. 14.

*Sidonops* seu *Sydonops* seu *Synops*; *S. alba* Kieschnick, from Ternate, distinct from *S. picteti* Tops., from Amboina, but probably identical with *S. picteti* Lindgren from Java, redescribed; THIELE (68) pp. 45-47, pl. ii, fig. 16. *S. picteti* Tops., from Christmas Island; KIRKPATRICK (27) p. 130.

## Family PLACOSPONGIDÆ.

Characters of family; KIESCHNICK (26) p. 573: diagnosis and list of genera; MINCHIN (47) p. 148.

*Placospongia* Gray, diagnosis of genus, p. 573; *P. melobesioides* Gray, redescribed, p. 574, pl. xlv, fig. 2: KIESCHNICK (26). *P. mixta*, n. sp., for specimen from Ternate wrongly identified by Kieschnick [(24) Zool. Rec. 1896] as *P. melobesioides* Gray; THIELE (68) pp. 56, 72 & 73, pl. iii, fig. 25.

## Family RAPHDIDÆ.

*Raphididæ*, n. f. of Tetractinellids for the genera *Ophiraphidites* and *Cephaloraphidites*; SCHRAMMEN (57) p. 9.

†*Cephaloraphidites*, n. g., diagnosis, p. 6; *C. cavernosus*, n. sp., pp. 6 & 7, pl. iii, fig. 4; *C. milleporatus*, n. sp., p. 6, pl. ii, fig. 4, from Upper Senonian: SCHRAMMEN (57).

†*Ophiraphidites* Crtr., diagnosis; SCHRAMMEN (57) p. 4. *O. anastomans* Hinde; ROWE (55) p. 359. *O. cylindricus*, n. sp., p. 5, pl. i, fig. 3, pl. iii, fig. 2; *O. infundibuliformis*, n. sp., p. 5, pl. i, fig. 1, pl. ii, fig. 6; *O. tuberosus*, n. sp., p. 5, pl. ii, fig. 5: SCHRAMMEN (57).

## (2) LITHISTIDA.

Diagnosed as a *suborder*; MINCHIN (47) p. 148: as an *order*, divided into five suborders, *Tetracladina*, *Eutaxi cladina*, *Anomocladina*, *Megamorina*, *Rhizomorina*; ZITTEL (82) pp. 46 & 47. *Lithistina* as suborder of order *Tetraxonida*; THIELE (68) pp. 20 & 49.

## Tribe HOPLOPHORA.

Diagnosis; MINCHIN (47) p. 148.

## Family TETRACLADIDÆ.

Diagnosed as a family; list of genera given; MINCHIN (47) p. 148.

*Tetracladina*, defined as a suborder; ZITTEL (82) p. 47.

†*Aulocopium*, genus defined; *A. aurantium* Oswald, figured: ZITTEL (82) p. 47.

†*Callopegma* Z., genus defined; *C. acaule* Z., the sponge and its skeleton figured: ZITTEL (82) p. 48.

*Discodermis claviformis* Kieschnick [(24) Zool. Rec. 1896]; doubts thrown on the validity of the species, pp. 49 & 50; *D. conica* Kieschnick, a *Theonella*, p. 50: THIELE (68).

†*Hallirhoa* Lamx., genus defined; ZITTEL (82) p. 49. *H. agariciformis* Benett, and *H. costata* Lam.; JUKES-BROWNE & HILL (25) pp. 68, 262, 264 & 480.

†*Jerea* Lamx., genus defined; *J. pyriformis* Lamx., and *J. quenstedti* Z., figured: ZITTEL (82) p. 49, figg. 57 & 58. *J. reticulata* Hinde, and *J. websteri* Low; JUKES-BROWNE & HILL (25) pp. 68 & 480.

†*Kalpinella pateriformis* Hinde, and †*K. rugosa* Hinde; JUKES-BROWNE & HILL (25) p. 480.

†*Pholidocladia ramosa* Hinde; ROWE (55) p. 360.

†*Phymatella* sp., p. 27, and †*P. intumescens* (Roem.), pp. 29, 36; ZAHÁLKA (79). †*P. nodosa* Hinde; JUKES-BROWNE & HILL (25) p. 481. †*P. tuberosa* (Roem.); ZAHÁLKA (79) p. 36, figured; ZITTEL (82) p. 48, fig. 55.

†*Plinthosella compacta* Hinde, †*P. nodosa* Hinde, and †*P. squamosa* Z.; ROWE (55) p. 360. †*P. squamosa* Z.; ZAHÁLKA (79) pp. 15, 36 & 44: figured; ZITTEL (82) p. 49, fig. 59.

†*Polyjerea arbuscula* Hinde, and †*P. lobata* Hinde; JUKES-BROWNE & HILL (25) p. 481.

†*Rhagadina* Z., genus defined; *R. rimosa* (Roem.), figured: ZITTEL (82) p. 49, fig. 60. *R. sulcata* Hinde; ROWE (55) p. 359.

†*Rhopalospongia gregaria* Benett, and †*R. obliqua* Hinde; JUKES-BROWNE & HILL (25) p. 481.

†*Siphonia* Park., genus defined; ZITTEL (82) p. 49. *S. geinitzi* Z.; ZAHÁLKA (78) pp. 31, 92. *S. königi* Mant.; ROWE (55) p. 359. *S. tulipa* Z., figured; ZITTEL (82) p. 56: JUKES-BROWNE & HILL (25) pp. 264 & 481.

†*Thecosiphonia craniatu* Zah., pp. 26, 36, and †*T. ternata* (Ras.), pp. 26, 29, 36; ZAHÁLKA (79).

*Theonella*, genus characterized, p. 50; *T. conica* (Kieschnick) from Ternate redescribed, pp. 50–52, pl. iii, figg. 1 & 2; *T. incerta*, n. sp., from Ternate, perhaps identical with either *T. pratti* Bwk. or *T. ferruginea* H., p. 54, pl. iii, figg. 7 & 8; *T. swinhoei* Gray, from Ternate, pp. 52 & 53, pl. iii, figg. 3 & 4: THIELE (68).

†*Trachynycton nodosum* Hinde; JUKES-BROWNE & HILL (25) p. 481.

## Family DESMANTHIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 149.

## Family CORALLISTIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 149.

## Family PLEROMIDÆ seu MEGAMORINIDÆ.

Diagnosis of family and list of genera: MINCHIN (47) p. 149: as suborder *Megamorina*, defined; ZITTEL (82)

## Family STREPTASTERIDÆ.

- Diagnosis of family and list of genera ; MINCHIN (47) p. 150 : diagnosis of family, p. 280, list of genera comprised in it, p. 2 ; TOPSENT (70).  
*Holoxea* Tops., application and character of genus ; THIELE (68) p. 59 : diagnosis of the genus ; TOPSENT (70) p. 282. *H. collectrix*, n. sp., from Ternate ; THIELE (68) pp. 60 & 61, pl. iii, fig. 15. *H. furtiva* Tops., full description, with distribution ; TOPSENT (70) pp. 282-284, pl. viii, fig. 10. *H. valida*, n. sp., from Ternate ; THIELE (68) pp. 59 & 60, pl. iii, fig. 14.  
*Spiroxya* Tops., diagnosis of genus, p. 280 ; genus closely allied to *Rhaphidistia* Carter, p. 282 ; *S. heteroclita* Tops., full description, with synonymy and distribution, pp. 280-282, pl. viii, fig. 11 : TOPSENT (70).

## Family TETHYIDÆ.

- Diagnosis and list of genera ; MINCHIN (47) p. 150 : diagnosis, p. 284, list of genera, p. 2, and affinities of the family, pp. 289 & 307 ; TOPSENT (70).  
*Aaptos adriatica* Gray, vide etiam *Tuberella aaptos*.  
*Tethya* Lam., diagnosis of genus ; KIESCHNICK (26) p. 574 : application of the name discussed ; THIELE (68) p. 61 : diagnosis of the genus ; TOPSENT (70) p. 294. *T. affinis*, n. sp., from Christmas Island, allied to *T. japonica* Soll. ; KIRKPATRICK (27) pp. 133 & 134, pl. xii, fig. 1, pl. xiii, figg. 3a-d. *T. corticata* Lend., distinct from *T. lyncurium*, but synonym of *T. japonica* Soll. ; TOPSENT (70) p. 297. *T. ingalli* Bwk., from Christmas Island ; KIRKPATRICK (27) p. 132 : distinct from *T. lyncurium*, but identical with *T. cliftoni* Bwk., *T. robusta* Bwk., and probably also *T. seychellensis*, E. P. Wright, which become synonyms ; TOPSENT (70) p. 296. *T. lyncurium* (L.) Lam., full description with synonymy and distribution ; TOPSENT (70) pp. 294-312, pl. viii, figg. 8, 9, 14, 15. *T. cf. nux* Sel. from Samoa and Ternate ; THIELE (70) pp. 62 & 63, pl. iii, figg. 16 & 17. *T. seychellensis* (E. P. Wright), redescribed ; KIESCHNICK (26) pp. 574 & 575 : from Christmas Island ; KIRKPATRICK (27) p. 133 : from Ternate, redescribed ; THIELE (68) pp. 61 & 62 ; a synonym of *T. ingalli* Bwk. ; TOPSENT (70) p. 296.  
*Tethyophæna silifica* O. S., a synonym of *Tuberella aaptos* ; TOPSENT (70) p. 287.  
*Tuberella* Keller, diagnosis, p. 284, type and unique species, *T. aaptos* (O. S.) Tops., redescribed, pp. 285-294, pl. viii, figg. 12 & 13 ; synonyms *T.* (" *Amorphina* ") *duchassaingii* Tops., p. 287 and *T. tethyoides* Keller, pp. 3 & 287 ; *T. papillata* Keller is certainly a *Polymastia*, probably *P. mammillaris* : TOPSENT (70). [But from the list of synonyms given by the author it would appear that the correct designation of the species termed by him *Tuberella aaptos* should be *Aaptos aaptos*.]

## Family STYLOCORDYLIDÆ.

- Diagnosis of family and list of genera ; MINCHIN (47) p. 150 : list of genera ; TOPSENT (70) p. 3.  
*Stylocordyla borealis* (Lovén), distribution ; LAMBE (32) p. 163 : its claims to be included in the fauna of France ; TOPSENT (70) p. 6.  
 †*S. radix* ; ZAHÁLKA (78) pp. 80, 93.

## 2. Sub-order CLAVULINA.

- Diagnosis ; MINCHIN (47) p. 151 : *Clavulida*, diagnosis ; TOPSENT (70) p. 24 : regarded as one family, *Clavulidæ* ; THIELE (68) p. 56.

## Family CLIONIDÆ.

Diagnosis of family and list of genera; MINCHIN (47) p. 151: diagnosis, p. 24, and list of genera, p. 2; TOPSENT (70).

*Alectona* Crtr., diagnosis of genus, p. 24, affinities of genus with *Thoosa*, *Dotona*, and *Cliona*, pp. 31 & 32: *A. millari* Crtr., redescribed from Banyuls, with full distribution, pp. 24-30, pl. i, figg. 1-3; TOPSENT (70): remarks on spiculation; LENDENFELD in review, p. 925.

*Cliona* Grant, diagnosis of genus, p. 32; *C. alderi* Hanc. and *C. angulata* Hanc., synonyms of *C. celata*, p. 53; *C. caribbea* Crtr. a synonym of *C. viridis*, p. 87; TOPSENT (70). *C. celata* Grant, systematic position, distribution, organisation, and mode of life; TOPSENT (69): full description, with synonymy and distribution; TOPSENT (70) pp. 32-55, pl. i, figg. 5, 6-9, pl. ii, fig. 1: GILSON (19) p. 33: general distribution; LAMBE (32) p. 164. *C. concharum* Thiele, a synonym of *C. vastifica*, p. 70; *C. corallinoides* Hanc., a synonym of *C. vastifica*, p. 68; TOPSENT (70). †*C. cretaceu* Portl.; ROWE (55) p. 359. *C. dissimilis* R. & D., a synonym of *C. celata*; TOPSENT (70) p. 55. †*C. erodens* Dollf.; LERICHE (34) pp. 281 & 283. *C. euryphylla* Tops., redescribed and compared with other species, pp. 100 & 101, text-fig. 1a-a"; *C. globulifera* Hanc., a synonym of *C. celata*, p. 54; *C. gorgonioides* Hanc., a synonym of *C. celata*, p. 53; *C. gracilis* Hanc., a synonym of *C. vastifica*, p. 68; *C. hironi* (Lend.), affinities discussed, shown to be closely allied to *C. celata* and to form with this species and with *C. vastifica* Hanc., *C. carpenteri* Hanc., *C. abyssorum* Crtr., and *C. stationis* Nassonow, a distinct section of the genus, pp. 44 & 68; *C. howsei* Hanc., a synonym of *C. lobata*, p. 76; *C. jullieni* Tops., redescribed and compared with other species, pp. 83 & 101, text-fig. 1, b-b"; *C. labyrinthica* Hanc., description, with distribution, pp. 102-104, pl. iii, fig. 7; *C. linearis* Soll., a synonym of *C. celata*, p. 43; *C. lobata* Hanc., full description, with synonymy and distribution, pp. 70-77, pl. ii, figg. 2 & 10, pl. iii, fig. 1, and pl. iv, fig. 1; *C. mazatlensis* Hanc., synonym of *C. vastifica*, p. 68; TOPSENT (70). *C. mucronata* Sollas, from Funafuti; KIRKPATRICK (28) p. 352. *C. northumbria* Hanc., synonym of *C. vastifica*; TOPSENT (70) p. 68. *C. orientalis*, n. sp., from Ternate; perhaps identical with *Suberites coronarius* Carter, from Mergui Archipelago, but not with *Suberites coronarius* Carter, from West Indies; THIELE (70) pp. 71 & 72, pl. iii, fig. 24. †*C. (lione)?* [sic] *ovalis* Frič; ZAHÁLKA (78) p. 93. *C. pruvoti*, n. sp., from Banyuls; TOPSENT (70) pp. 104-106, pl. iii, fig. 6. *C. purpurea* Hancock, type specimen re-examined, and to be placed in the new genus *Dyscliona*, q. v.; KIRKPATRICK (28) p. 353. *C. radiata* Hanc., probably not specifically distinct from *C. celata*; TOPSENT (70) p. 54. *C. schmidtii* (R.), full description, with synonymy and distribution; TOPSENT (70) pp. 77-84, pl. ii, fig. 15 and pl. iii, fig. 5: from Funafuti, 25-45 fathoms; KIRKPATRICK (28) p. 352. *C. subulata* Soll., synonym of *C. viridis*; TOPSENT (70) p. 87. *C. sulphurea* (Desor) Leidy, synonym of *C. celata*; TOPSENT (70) pp. 32, 34, 55: recorded as common at Beaufort; WILSON (77) p. 350. *C. vastifica* Hanc., pp. 56-70, pl. ii, figg. 3-9; *C. vermifera* Hanc., occurrence on French coast doubtful, p. 4; *C. viridis* (O. S.) Gray, pp. 84-98, pl. ii, figg. 11-14, pl. iii, figg. 2 & 3, pl. iv, fig. 2; *C. viridis* (O. S.) var. *carteri* (R.), full descriptions with synonymy and distribution, pp. 98-102, pl. iii, fig. 4; *C. warreni* Crtr., distinct from *C. celata* but identical with *C. quadratu* Hanc., p. 54; TOPSENT (70).

*Cribrella labiata* Keller, synonym of *Cliona viridis*; TOPSENT (70) p. 88.

*Dotona* Crtr., affinities of the genus and the unique species, *D. pulchella*, with *Alectona* and *Cliona*; TOPSENT (70) p. 31.

- Dyscliona*, n.g. of *Clionidæ*; type species *D. davidi*, n.sp., from Funafuti 25-45 fathoms; to include also *Cliona purpurea* Hancock; KIRKPATRICK (28) pp. 352-354, pl. xiv, fig. 1, a-g.
- Osculina polystomella* O. S., synonym of *Cliona viridis*; TOPSENT (70) p. 87.
- Papillella* (*Papillina*) *quadrata* (Hanc.) Lend. and *P. suberea* (O. S.) synonyms of *Cliona celata* Grant, p. 34, pp. 39 & 40, and p. 55; *Papillina nigricans* O. S., synonym of *Cliona viridis*, p. 87; TOPSENT (70).
- Raphyrus celatus* Gray and *R. griffithsi* Bwk., both names denote merely the "raphyroid" stage of growth attained by *Cliona celata*, and therefore to be abolished, p. 49; *R. hizoni* Lend. to be *Cliona hizoni*, q.v., p. 41; TOPSENT (70).
- Thoosa* Hanc.; affinities of the genus with *Alectona*; *T. letellieri* a transitional type, p. 31; *T. hancocki* includes *Vioa ramosa* Lend., p. 88 footnote; TOPSENT (70).
- Vioa granti* O. S., probably identical with *Cliona vastifica* Hanc.; TOPSENT (70) p. 69. "*Vioa johnstonii* O. S."; type of genus *Jaspis* Gray, q. v.; THIELE (68) p. 58: = *Coppatias johnstoni*, q. v.; TOPSENT (70). *V. ramosa* Lendenfeld, a synonym of *Thoosa hancocki*, p. 88 footnote; *V. schmidtii* Ridley non Carter = *Cliona schmidtii*, p. 78; *V. typica* Græffe, synonym of *Cliona viridis*, p. 88: TOPSENT (70).

### Family SPIRASTRELLIDÆ.

- Diagnosis of family and list of genera; MINCHIN (47) p. 151, diagnosis, p. 107, and list of genera comprised, p. 2; TOPSENT (70).
- Hymedesmia* Bwk., diagnosis and history of the genus, with criticism of species referred to it and belonging to it; genotype *H. stellata* Bwk., pp. 110-114; *H. acutostellata* Hanc. is a *Vibulinus* (*Axinellidæ*), p. 114; *H. bistellata* (O. S.), Tops., full description, with synonymy and distribution, pp. 125-129, pl. iii, figs. 13 & 16; *H. halleri* Tops., full description, with distribution, pp. 119 & 120, pl. iii, fig. 9; *H. halleri*, var. *crassa*, n. var., from British Channel, French Coast, pp. 120 & 121, pl. iii, fig. 10; *H. indistincta* Bwk., a synonym of *Plocamia ambigua* (Bwk.) (*Paciloscleridæ*, *Bubarinæ*), pp. 112 & 113; *H. inflata* Bwk. is a *Pytheas* (*Paciloscleridæ*, *Ectyoninæ*), p. 113; *H. johnsoni* Bwk. is a *Hamacantha* (*Paciloscleridæ*, *Esperellinæ*), p. 113; *H. mixta* Tops., full description, with distribution, pp. 122 & 123, pl. iii, fig. 11; *H. occulta* Bwk. is a *Hymeraphia* (*Paciloscleridæ*, *Ectyoninæ*) p. 113; *H. pansa* Bwk. is a *Myxilla*, p. 113; *H. peachi* Bwk. is a *Hymeraphia* (*Paciloscleridæ*, *Ectyoninæ*), p. 113; *H. pilata* Bwk. and *H. pulchella* Bwk. belong to genus *Myxilla*, p. 113; *H. polita* Ridl. is an Ectyonine, probably a *Microciona*, p. 113; *H. radiata* Bwk. belongs to genus *Myxilla*, p. 111; *H. simplicissima* Bwk. is a *Suberites*, p. 113; *H. stellata* Bwk., full description, with synonymy and distribution, pp. 114-119, pl. iii, fig. 15; *H. tenuicula* Bwk. is a synonym of *Terpios fugax*, p. 113; *H. tristellata* Tops., full description, with distribution, pp. 129-131, pl. iii, fig. 14; *H. unistellata* Tops., full description, with distribution, pp. 123-125, pl. iii, fig. 12; *H. unistellata*, var. *chondrilloides*, from the Azores, p. 125; *H. zelandica* Bwk. belongs to genus *Leptosia* (*Paciloscleridæ*, *Dendorycinæ*), p. 111: TOPSENT (70). For further notes on the spiculation of *H. bistellata* and *H. tristellata* see LENDENFELD in review, p. 925.
- Latrunculia clavigera*, n.sp., from Funafuti, 86 fathoms; KIRKPATRICK (28) pp. 354 & 355, pl. xiv, fig. 2, a-e.

- Spirastrella* O. S., diagnosis of genus, KIESCHNICK (26) p. 575; TOPSENT (70) p. 107. *S. bistellata* Lend. is distinct from *Hymedesmia bistellata* O. S., and perhaps is identical with *H. decumbens* Ridl.; TOPSENT (70) pp. 113 & 128. *S. carnosa* Tops., from Christmas Island; KIRKPATRICK (27) p. 134. *S. cunctatrix* O. S., figure of spiraster, and distribution; TOPSENT (70) pp. 8 & 101, text-fig. 1c, and p. 108. *S. cylindrica* Kieschnick [(24) Zool. Rec. 1896] identical with *S. vagabunda* Ridley; THIELE (68) pp. 56, 70, 71, pl. iii, fig. 23. *S. decumbens* Lendenfeld, from Adriatic, = *S. cunctatrix*; TOPSENT (70) p. 108. *S. decumbens* R. & D., var. *robusta*, n. var., from Christmas Island; KIRKPATRICK (27) pp. 134 & 135. *S. dilatata* Kieschnick [(24) Zool. Rec. 1896], identical with *S. spinispiruliferu* Crtr.; THIELE (68) pp. 56, 69, 70, pl. iii, fig. 22. *S. lacunosa*, n. sp.; KIESCHNICK (26) p. 575. *S. minax* Tops., full description, with synonymy and distribution; TOPSENT (70) pp. 107-110, pl. iii, fig. 8. *S. semilunaris* Lindgren, a synonym of *S. decumbens*; KIRKPATRICK (27) p. 134. *S. spiculifera*, n. sp.; KIESCHNICK (26) p. 575.
- Stelligera* Gray, used by Lendenfeld for *Hymedesmia*, is a synonym of *Vibulinus* Gray (*Axinellidae*); TOPSENT (70) p. 112.
- Timea* Gray 1867 for *Hymedesmia stellata* Bwk., becomes synonym of *Hymedesmia*; TOPSENT (70) p. 112.

### Family POLYMASTIDÆ.

- Diagnosis of family; KIESCHNICK (26) p. 575: diagnosis and list of genera; MINCHIN (47) p. 151: diagnosis, p. 131, and list of genera, p. 2; TOPSENT (70).
- Polymastia* Bwk., diagnosis of genus; KIESCHNICK (26) p. 576; TOPSENT (70) p. 131. *P. affinis* Thiele, a synonym of *P. mammillaris*, pp. 135, 147; *P. bulbosa* Bwk., a synonym of *P. robusta*, p. 150; TOPSENT (70). *P. laganooides* Lambe, distribution; LAMBE (32) p. 163. *P. mammillaris* (O. F. M.) Bwk., complete distribution; LAMBE (32) p. 163: recorded from Amboina; KIESCHNICK (26) p. 576: full description with synonymy and distribution; TOPSENT (70) pp. 131-147, pl. iv, figg. 8-13. *P. ornata* Bwk., a synonym of *P. robusta*; TOPSENT (70) pp. 150, 151. *P. robusta* Bwk., distribution; LAMBE (32) p. 163: full description, with synonymy and distribution; TOPSENT (70) pp. 147-157, pl. iv, figg. 3-7, 14. *P. spinula* Bwk., probably identical with *P. mammillaris*, p. 145; *P. uberrima* for *Rinalda uberrima* O. S., p. 152; TOPSENT (70).
- Quasillina*, diagnosis of genus, p. 157; *Q. brevis* (Bwk.) Norm., full description with synonymy and distribution, pp. 158-164, pl. vi, figg. 11 & 12; TOPSENT (70).
- Rinalda arctica* Merejk., synonym of *Polymastia mammillaris*, p. 136; *R. uberrima* O. S., a *Polymastia*, p. 152; TOPSENT (70).
- Tentorium semisuberites* O. S., from Davis Strait, 150 fathoms, and East Greenland, 250 fathoms; LAMBE (31) p. 25: general distribution; LAMBE (32) p. 163: figured; MINCHIN (47) p. 20, fig. 31.
- Trichostemma hemisphericum* M. Sars, distribution; LAMBE (32) p. 163: includes *Rudiella sol*; TOPSENT (70) p. 136.

### Family SUBERITIDÆ.

- Diagnosis of family; KIESCHNICK (26) p. 576: diagnosis and list of genera; MINCHIN (47) p. 151: diagnosis, p. 164, and list of genera comprised, p. 2; TOPSENT (70).
- Ficulina* Gray, definition, p. 203: genotype *F. ficus* L., fully described

- with synonymy and distribution, pp. 203-224, pl. v, figg. 6-15; TOPSENT (70) [vide etiam *Suberites ficus* and *S. suberea*].
- Laxosuberites*, new diagnosis of genus and statement of species referable to it, pp. 184 & 185; *L. ectyoninus*, n. sp., from Banyuls, pp. 189-192, pl. vii, figg. 11 & 12; *L. rugosus* (O. S.) Tops., full description, with synonymy and distribution, pp. 185-189, pl. v, figg. 1-4: TOPSENT (70) [vide etiam *Suberites capillitium*, *S. sericeus*, and *S. spongiosus*.]
- Prosuberites*, diagnosis of genus, p. 174; *P. epiphytum* (Lam.) Tops.: full description, with synonymy and distribution, pp. 179-184, pl. vi, fig. 15; *P. longispina* Tops., full description, with distribution, pp. 174-177, pl. vi, fig. 14; *P. rugosus* Tops., full description, with distribution, pp. 177-179, pl. vi, fig. 13: TOPSENT (70).
- Pseudosuberites*, diagnosis of genus; TOPSENT (70) p. 165. *P. andrewsi*, n. sp., from Christmas Island; KIRKPATRICK (27) p. 135, pl. xii, figg. 2a-b, pl. xiii, fig. 7. *P. hyalinus* (R. & D.) Tops., full description, with synonymy and distribution, pp. 170-174, pl. vii, fig. 9; *P. sulphureus* (Bean) Tops., full description, with synonymy and distribution, pp. 165-170, pl. v, fig. 5 and pl. vii, fig. 10; TOPSENT (70).
- Rhizaxinella*, diagnosis of genus, p. 243; *R. clavigera* Keller, synonym of *R. pyrifer*, p. 245; *R. elongata* (R. & D.) Tops., full description, with synonymy and description, pp. 249-252, pl. viii, figg. 3-5; *R. pyrifer* (D. Ch.) Vosm., full description, with synonymy and distribution, pp. 243-249, pl. viii, figg. 6 & 7; TOPSENT (70).
- Suberanthus flavus* Lendenfeld non Lieberkühn, a synonym of *Pseudosuberites sulphureus*; TOPSENT (70) p. 170.
- Suberites*, diagnosis of genus, KIESCHNICK (26) p. 576; TOPSENT (70) p. 224. *S. alveus* Hansen, a species of doubtful value, perhaps identical with *Polymastia robusta*; TOPSENT (70) pp. 136 & 151. *S. capillitium* Tops., enters the genus *Laxosuberites*; TOPSENT (70) p. 184: figured; RICHARD (51) pl. ix, fig. 10. *S. carnosus* (Johnst.) Gray, full description, with synonymy and distribution, and of varieties *depressus*, *flavus*, *incrustans*, *ramosus* and *typicus*; TOPSENT (70) pp. 233-243, pl. vii, figg. 1-5. *S. concinnus* Lambe, distribution; LAMBE (32) p. 162. *S. conica* Hansen, a species of doubtful value, perhaps identical with *Polymastia mammillaris*; TOPSENT (70) p. 136. *S. coronarius* Carter, vide etiam *Cliona orientalis*. *S. domuncula* (Olivi) Ndo., full description, with synonymy and distribution, pp. 225-233, pl. vi, figg. 1-9; *S. epiphytum* to be placed in genus *Prosuberites*, pp. 3 & 181; TOPSENT (70). *S. ficus* (L.) Johnst., general distribution; LAMBE (32) p. 161, =type species of genus *Ficulina* Gray, q. v.; TOPSENT (70) pp. 3 & 203-217. *S. flavus* Liebk., a variety of *S. carnosus*; TOPSENT (70) p. 236. *S. hispidus* Bwk., distribution; LAMBE (32) p. 161. *S. incrustans* Hansen, a species of doubtful value; TOPSENT (70) p. 136. *S. mollis*, n. sp., KIESCHNICK (26) p. 576, pl. xlv, fig. 4. *S. montalbidus* Carter, from Hudson Bay etc.; LAMBE (30) p. 278 and (31) pp. 24 & 25: general distribution; LAMBE (32) p. 162: a synonym of *Ficulina ficus*, but *S. montalbidus* Lambe = *Ficulina tiitkeni*, perhaps a variety of *F. ficus*; TOPSENT (70) pp. 206, 207, & 213. *S. montiniger* Crtr., distribution; LAMBE (32) p. 162. *S. oculatus* Kieschnick [(24) Zool. Rec. 1896] is a *Ciccalyptu* [*Axinellidæ*], q. v.; THIELE (68) p. 75. *S. pacifica* Lambe, distribution; LAMBE (32) p. 162. *S. paludum* O. S., a synonym of *Laxosuberites rugosus*, pp. 8 & 185; *S. placenta* Thiele, a synonym of *Ficulina ficus*, p. 213; *S. radians* Hansen, a species of doubtful value, perhaps a *Trichostemma*, p. 136; TOPSENT (70). *S. radiatus* Kieschnick [(24) Zool. Rec. 1896] a doubtful species; THIELE (70) p. 56. *S. sericeus* Thiele, referred to genus *Laxosuberites*; TOPSENT (70) p. 184. *S. simplex* Lambe, distribution; LAMBE (32) p. 162. *S. spissus* Tops.,



a synonym of *Tuberella aaptos*, p. 288; *S. spongiosus* O. S., referred to genus *Laxosuberites*, p. 184; TOPSENT (70). *S. suberea* Johnst., distribution; LAMBE (32) p. 161: a synonym of *Ficulina ficus*, var. *suberea*; TOPSENT (70) p. 211. *S. tenuiculus* Bwk., a synonym of *Terpios fugax* Duch. et Mich.; TOPSENT (70) p. 3. *S. wilsoni*, purple pigment studied; MACMUNN (45) pp. 337-342, 346 & 347. *Terpios*, new diagnosis of genus, p. 192: its distinctness from *Suberites*, p. 196; *T. fugax* Duch. et Mich., full description, with synonymy and distribution, pp. 193-203, pl. vi, fig. 10; TOPSENT (70).

### Family MESAPIDÆ.

*Mesapida*, n. fam. of Clavulina for *Mesapos* Gray and *Tethyspira* Tops., diagnosis; TOPSENT (70) p. 252. *Mesapos* Gray, diagnosis, p. 252, and affinities, p. 256; *M. stellifera* (Bwk.) Gray, full description, with synonymy and distribution, pp. 253-257, pl. vii, fig. 8: TOPSENT (70). *Tethyspira* Tops., diagnosis; TOPSENT (70) p. 257: the genus should be referred to the *Ectyonina* (*Halichondrina*); LENDENFELD in review, p. 925. *T. spinosa* (Bwk.) Tops., full description, with synonymy and distribution; TOPSENT (70) pp. 257-265, pl. vii, fig. 7, and text-fig. 2, p. 262.

### (b) Order HALICHONDRINA.

Diagnosis of order; MINCHIN (47) p. 151. Oligosilicina, sensu Keller, = Halichondrina, diagnosis and characters; KIESCHNICK (26) pp. 563 & 564.

### Family HAPLOSCLERIDÆ.

Diagnosis of family and of sub-families *Chalinina*, *Renierina*, *Spongilina*, *Gelliodina*, and *Phlaeodictyina* with list of genera; MINCHIN (47) pp. 151 & 152.

### Sub-family CHALININÆ.

*Chalina* Bwk., diagnosis of genus; KIESCHNICK (26) p. 567. *C. arbuscula*, recorded as common at Beaufort; WILSON (77) p. 350. *C. elastica*, n. sp.; KIESCHNICK (26) p. 567. *C. oculata* (Pallas), distribution; LAMBE (32) p. 155: figured; MINCHIN (47) p. 21, fig. 34. *Pachychalina conulosa*, n. sp.; KIESCHNICK (26) p. 568, pl. xlv, fig. 8. *P. fibrosa*, R. & D.; KIRKPATRICK (28) p. 356. *Phyllosiphonia elastica*, n. sp., pp. 566 & 567, pl. xlv, fig. 6: *P. erecta*, n. sp., p. 566; KIESCHNICK (26). *Siphochalina oculatu* L. [sic]; GILSON (19) p. 33. *Siphonochalina* O. S., characters, p. 567; *S. fragilis*, n. sp., p. 567, pl. xlv, fig. 5; KIESCHNICK (26). *Toxochalina* Ridl., diagnosis of genus; KIESCHNICK (26) p. 565. *T. borealis* Lambe, distribution; LAMBE (32) p. 155. *T. schulzei*, n. sp.; KIESCHNICK (26) p. 566, pl. xlv, fig. 7.

### Sub-family RENIERINÆ.

*Eumastia sitiens* O. S., distribution; LAMBE (32) p. 154. *Gellius arcoferus* Vosm., and *G. flagellifer* R. & D., distribution; LAMBE (32) p. 155. *G. laurentinus*, n. sp., from Gulf of St Lawrence, 100 fathoms, Strait of Belle Isle, 60 fathoms, Davis Strait, 130 fathoms; LAMBE (31) pp. 20 & 21, pl. i, figg. 1, 1a; LAMBE (32) p. 155. *G. sp. ?*

- nearest to *G. glacialis* and *G. flagellifer*, from near Gijón, Coast of Asturias, 260 meters; ORUETA (48).
- Halichondria disparilis* Lambe, distribution; LAMBE (32) p. 154. "*H. farinaria*" Bwk., a synonym of *Ficulina ficus*, var. *farinaria*; TOPSENT (70) p. 212. *H. panicea* Johnston, distribution; LAMBE (32) p. 154. *H. solida* R. & D., and *H. solida* var. *rugosa* R. & D., from Christmas Island; KIRKPATRICK (27) pp. 139 & 140.
- Petrosia exigua*, n. sp., from Christmas Island; KIRKPATRICK (27) p. 139, pl. xii, fig. 7, pl. xiii, fig. 4. *P. hispidula* R. & D., distribution; LAMBE (32) p. 154.
- Reniera cinerea* Grant, distribution; LAMBE (32) p. 154. *R. innominata*, n. sp., from Christmas Island and Marie Louise Island, Amirante Group; KIRKPATRICK (27) pp. 138 & 139, pl. xii, figg. 6, 6a, pl. xiii, figg. 5a-b. *R. mollis* Lambe, from Labrador Coast, and near the entrance to the Baie des Chaleurs, etc.; LAMBE (31) p. 19; general distribution; LAMBE (30) p. 277 and (32) p. 155. *R. rufescens* Lambe, distribution; LAMBE (32) p. 154.

### Sub-family SPONGILLINÆ.

- Ephydatia blembingia*, n. sp., from the river Blembing, Siamese Malay States, approaches *E. plumosa* Crtr. more closely than any other species; EVANS (15) pp. 72-81, pl. 1, and pl. 4. *E. furciatilis* Liebk.; LEVANDER (35) p. 3: STILES (67) p. 331: WELTNER (74) p. 522, pl. xlii, fig. 9. *E. mülleri* Liebk.; STENROOS (66) pp. 39, 84, & 233; ZSCHOKKE (83) p. 73. *Ephydatia* [sic] *mülleri* Liebk.; HEMPEL (21) p. lxii. *E. multidentata* (Weltn.), from Burnett River, Queensland: removed from genus *Tubella* and redescribed; WELTNER (74) pp. 519-523, pl. xlii, fig. A, and figg. 1-8.
- Euspongilla*; see *Spongilla*.
- Heteromeyenia macounti*, n. sp., from Sable Island, in the Atlantic Ocean, 100 miles from Nova Scotia; MACKAY (44).
- Lubomirskia baicalensis*, something about it in Russian; ANON (2).
- Spongilla* seu *Euspongilla*; *S. fragilis* Leidy; STENROOS (66) pp. 39, 81, 84 & 233; WELTNER (74) p. 523: ZSCHOKKE (83) p. 73. *S. lacustris* auct., LEVANDER (36) p. 9: STENROOS (66) pp. 39, 81, 84 and 233: STILES (67) p. 331: ZSCHOKKE (83) p. 73. *S. lacustris* var. *lieberkühnii* Noll.; HEMPEL (21) p. lxii.
- Spongillid*, sp. incert., from Burnett River, Queensland; WELTNER (74) p. 523.
- Tubella multidentata* Weltn., to be placed in genus *Ephydatia*; WELTNER (74) p. 519.

### Sub-family GELLIODINÆ.

- Chondropsis ceratosus*, n. sp., from Funafuti, 30 fathoms; KIRKPATRICK (28) pp. 355 & 356, pl. xv, fig. 3a-c.
- Gellio(i)des* Ridl., diagnosis of genus [placed amongst "*Chalinidæ*"], p. 565; *G. ramosa*, n. sp., p. 565, pl. xlii, fig. 3: KIESCHNICK (26).

### Sub-family PHLEODICTYINÆ.

- Rhizochalina pellucida* R., p. 138; *R. sessilis*, n. sp., from Christmas Island, allied to *Pellina eusiphonia* R., p. 138, pl. xii, fig. 5, pl. xiii, fig. 8; KIRKPATRICK (27).

## Family PÆCILOSCLERIDÆ.

Diagnosis of family and of sub-families *Esperellinæ*, *Dendorycinæ*, *Ectyoinæ*, and *Bubarinæ*, with list of genera ; MINCHIN (47) p. 152.

## Sub-family ESPERELLINÆ.

- Chondrocladia* Wyv. Th., characters of genus ; KIESCHNICK (26) p. 571. *C. alaskensis* Lambe, distribution ; LAMBE (32) p. 158. *C. dura* n. sp. ; KIESCHNICK (26) p. 571. *C. pulchra* Lambe, distribution ; LAMBE (32) p. 158. *C. ramosa*, n. sp., p. 571, pl. xlv, fig. 11 ; *C. sessilis*, n. sp., pp. 571 & 572 ; KIESCHNICK (26).
- Cladorhiza abyssicola* Sara, distribution ; LAMBE (32) p. 158. *C. cupressiformis* Fristedt non Carter, to be *Esperella fristedti*, nom. nov. ; LAMBE (31) p. 21. *C. grandis* Verrill (syn. *C. nobilis* Fristedt), and *C. nordenskiöldii* Frist., distribution ; LAMBE (32) p. 158.
- Dermacella* O. S., genus diagnosed ; KIESCHNICK (26) p. 568. *D.* sp. ; KIRKPATRICK (27) p. 137. *D. aberrans* Tops., figured ; RICHARD (51) pl. ix, fig. 7. *D. fragilis*, n. sp. ; KIESCHNICK (26) p. 568, pl. xlv, fig. 53-56. *D. peachii*, var. *grælandicu* Frist., and *D. pennata* Lambe, distribution ; LAMBE (32) p. 156.
- Dermacidon* (*Homæodictya*) *palmata* Johnst., distribution ; LAMBE (32) p. 159.
- Esperella adhaerens* Lambe, distribution ; LAMBE (32) p. 156. *E. fristedti*, nom. nov., for *Cladorhiza cupressiformis* Fristedt, non Carter, from Davis Strait, 100, 130 & 200 fathoms, and Siberian Arctic Ocean ; LAMBE (31) pp. 21 & 22, pl. i, figg. 2, 2a-h ; LAMBE (32) p. 157. *E. helios* (Frist.), *E. hispida* Lambe, and *E. lingua* Bwk., distribution ; LAMBE (32) p. 156. *E. minuta*, n. sp., from Davis Strait, 200 fathoms ; LAMBE (31) p. 23, pl. i, figg. 3, 3a-c ; LAMBE (32) p. 157. *E. modesta* Lambe, *E. occidentalis* Lambe, and *E. serratahamata* Crtr., distribution ; LAMBE (32) p. 157.
- Esperiopsis* Carter, characters of the genus ; KIESCHNICK (26) p. 572. *E. laxa* Lambe, *E. quatsinoensis* Lambe, *E. rigida* Lambe, and *E. vancouverensis* Lambe, distribution ; LAMBE (32) pp. 157 & 158. *E. viridis*, n. sp. ; KIESCHNICK (26) p. 572, pl. xlv, fig. 12, pl. xlv, figg. 51 & 52.
- Hamacantha johnsoni* Gray, figured ; RICHARD (51) pl. ix, fig. 9. [Vide etiam *Hymedesmia johnsoni*.]
- Joyeuxia viridis* Tops., figured ; RICHARD (51) pl. ix, fig. 8.
- Raphiodesma affinis*, n. sp., Great Britain ; WALLER (72) p. 256, pl. 14.
- Stylotella columella*, see II, B, ii, d. *S.* sp. from Christmas Island, pp. 137 & 138 ; *S. irregularis*, n. sp., from Christmas Island, allied to *Petrosia contignata* Thiele, p. 137, pl. xii, fig. 4, pl. xiii, figg. 6a-d ; KIRKPATRICK (27).

## Sub-family DENDORYCINÆ.

- Iophon chelifer* R. & D., from Gulf of St. Lawrence, 100 fathoms, and Davis Strait ; LAMBE (31) pp. 23 & 24 : general distribution ; LAMBE (32) p. 159.
- Iotrochota baculifera* R., var. *tumescens*, n. var., from Christmas Island ; KIRKPATRICK (27) pp. 136 & 137, pl. xiii, fig. 1 : *I. magna* Lambe, distribution ; LAMBE (32) p. 159.
- Tedania fragilis* Lambe, distribution ; LAMBE (32) p. 155 : *T. laevis*, n. sp., from Funafuti, 50-70 fathoms ; KIRKPATRICK (28) p. 355, pl. xiv, fig. 4, a-e.

## Sub-family ECTYONINÆ.

- Agelas gracilis* Whitelegge; KIRKPATRICK (28) p. 346.  
*Clathria delicata* Lambe, *C. lævigata* Lambe, and *C. loveni* Frist., distribution; LAMBE (32) p. 160.  
*Echinodictyum* Ridl., characters of genus, p. 570; *E. conulosum*, n. sp., pp. 570 & 571; *E. lacunosum*, n. sp., p. 570, pl. xlv, fig. 9: KIESCHNICK (26).  
*Hymenaphia spiniglobata* Crtr., is a *Hymedesmia* (*Spirastrellidæ*); TOPSENT (70) p. 113. [Vide etiam *Hymedesmia*.]  
*Lissomyxilla* Hanitsch, genus not accepted; TOPSENT (70) p. 265.  
*Microciona dubia*, n. sp., from Christmas Island; KIRKPATRICK (27) p. 136, pl. xii, figg. 3 & 3a, pl. xiii, figg. 2 a-f. *M. prolifera*, recorded as common at Beaufort; WILSON (77) p. 350.  
*Myxilla amaknakensis* Lambe; *M. barentsi* Vosm.; *M. behringensis* Lambe; *M. firma* Lambe; *M. incrustans* Johnst.; *M. lacunosa* Lambe; *M. parasitica* Lambe; and *M. rosacea* Lieb.: distribution; LAMBE (32) pp. 159 & 160.  
*Ophlitaspongia seriata* Bwk., figured; MINCHIN (47) p. 20, fig. 32.  
*Plumohalichondria plumosa*, see II, B, ii, d.  
*Rhaphidophlus* Ehlers, diagnosis of genus, p. 569; *R. cylindricus*, n. sp., p. 569, pl. xlv, fig. 10; *R. ramosus*, n. sp., pp. 569 & 570, pl. xlv, figg. 47-50; KIESCHNICK (26).  
*Stylostichon dendyi* Tops., figured; RICHARD (51) pl. ix, fig. 6.

## Sub-family BUBARINÆ.

- Plocamia munaarensis* Crtr., distribution; LAMBE (32) p. 161.

## Family AXINELLIDÆ.

- Diagnosis of family, with list of genera; MINCHIN (47) p. 153.  
*Acanthella* O. S., diagnosis; KIESCHNICK (26) p. 568. *A. acuta*, see II, B, ii, d. *A. costata*, n. sp.; KIESCHNICK (26) p. 568.  
*Axinella flustra* Tops., figured; RICHARD (51) pl. ix, fig. 5. *A. rugosa* Bwk., distribution; LAMBE (32) p. 161. †*A. stylus* Hinde; JUKER-BROWNE & HILL (25) p. 480.  
*Ciocalypta*, characters of genus (placed in the family "*Clavulidæ*"), pp. 73 & 74; *C. fatida* D., p. 75, pl. iii, fig. 26; *C. oculata* Kieschn., p. 75, pl. iii, fig. 27; *C. sacciformis*, n. sp., p. 76, pl. iii, fig. 28; *C. simplex*, n. sp., p. 76, pl. iii, fig. 29; all from Ternate: THIELE (68).  
*Hymeniacion conulosum* Tops.; KIRKPATRICK (27) pp. 135 & 136. "*H. foliatus*" Bwk., distinct from *Suberites carnosus*, p. 243; "*H. gelatinosa*" Bwk. 1866, a synonym of *Terpios fugax* (*Suberitidæ*), p. 196; *H. sanguinea* Bwk., a doubtful species, perhaps identical with *H. caruncula*, p. 261; "*H. suberea*" Bwk., a synonym of *Ficulina ficus*, pp. 209-211; "*H. tenebrosus*" Bwk., a synonym of *Ciona celata*, p. 54; "*H. virgultosa*" Johnst., a synonym of *Ficulina ficus*, var. *virgultosa*, p. 211: TOPSENT (70).  
*Leucophlæus* Carter, relations of the genus to *Ciocalypta*; THIELE (70) p. 74.  
*Phakellia dalli* Lambe, distribution; LAMBE (32) p. 161. *P. ventilabrum* Johnst., from Davis Strait; LAMBE (31) p. 24: general distribution; LAMBE (30) p. 277 and (32) p. 161: figured; MINCHIN (47) p. 22, fig. 35.

## MONAXONIDA INCERTÆ SEDIS.

- Timacospongia* Hinde, characters and occurrence; ZITTEL (82) p. 46.

## (iii) KERATOSA.

Diagnosis; MINCHIN (47) p. 153.

## (a) DICTYOCERATINA.

*Dictyoceratina*, **nom. nov.** for order *Monoceratina* Lendenfeld, with diagnosis; MINCHIN (47) p. 153.

## Family SPONGIDÆ.

Diagnosis of family, with list of genera; MINCHIN (47) p. 153: characters of family; SCHULZ (60) p. 530.

*Cacospongia* O. S., characters of genus, pp. 534 & 535; *C. amorphia* Pol., redescribed, pp. 536 & 537; SCHULZ (60). *C. dendroides*, vide etiam *Hircinia fusca*. *C. erecta*, **n. sp.**, pp. 535 & 536, pl. xliii, figg. 5-7; *C. oligoceras* Pol., redescribed, pp. 537 & 538: SCHULZ (60).

*Curteriospongia* Hyatt, characters of genus, p. 532; *C. radiata* Hyatt (= *Phyllospongia pennatula* Ldf.), redescribed, pp. 532 & 533; *C. radiata*, var. *dulsiana* Hyatt, redescribed, pp. 533 & 534: SCHULZ (60).

*Euspongia* sp. from Christmas Island; KIRKPATRICK (27) p. 128. *E. distans*, **n. sp.**, pp. 531 & 532, pl. xliii, figg. 1-4; *E. officinalis*, var. *adriatica* F. E. S., from Thursday Island and Amboina, pp. 530 & 531: SCHULZ (60).

*Hircinia* Ndo., characters of genus; SCHULZ (60) p. 538: to be kept distinct from *Polyfibrospongia*; KIRKPATRICK (28) p. 358. *H. conulosa* Ldf. = *Oligoceras conulosum* R., redescribed, pp. 539 & 540; *H. fusca* Ldf. = *Cacospongia dendroides*, var. *dura* Pol., redescribed, pp. 538 & 539; *H. gigantea* Ldf. = *H. horrens* R., redescribed, pp. 540 & 541: SCHULZ (60).

*Oligoceras conulosum*, vide etiam *Hircinia*.

*Phyllospongia pennatula* Ldf., vide etiam *Curteriospongia radiata* Hyatt.

*Polyfibrospongia* Bowerbank, genus diagnosed, p. 358; to be kept distinct from *Hircinia*, with two spp., *P. sweeti*, **n. sp.**, and *P. flabellifera* Bwk.; *P. gigantea* and *P. fasciculata* to be put under *Hircinia*; *P. neveti*, **n. sp.**, from Funafuti, 86 fathoms, nearly related to *P. flabellifera* Bwk., p. 359, pl. xv, fig. 2, a-c: KIRKPATRICK (28).

*Stelospongius cavernosus* Pallas, var. *pyriformis* Lend., from Funafuti; KIRKPATRICK (28) p. 358.

## Family SPONGELIDÆ.

Diagnosis of family, with list of genera; MINCHIN (47) p. 153: characters of family; SCHULZ (60) p. 541.

*Pæmmopemma purpureum* Crtr., from Funafuti, 50 fathoms; synonyms *Pseudoceratina durissima* Crtr., and *Holopsamma fuliginosa* Crtr.; KIRKPATRICK (28) p. 358.

*Spongelia*, characters of genus; SCHULZ (60) p. 542. *S. sp.*; KIRKPATRICK (27) p. 128. *S. pallescens fragilis*, var. *incrustans* F. E. S., redescribed; SCHULZ (60) pp. 542 & 543.

†*Spongelites*, **n. g.** of *Spongelidæ*, for *S. fellenbergi*, **n. sp.**, from the Lower Cretaceous (Berrias-Stufe), not from the Middle Jurassic (Dogger), of the Bernese Oberland; ROTHPLETZ (52) pp. 154-157, and (53) pp. 388 & 389.

## Family APLYSINIDÆ.

Diagnosis of family, with list of genera; MINCHIN (47) p. 154.

*Luffariella geometrica*, n. sp., from Funafuti, 30 fathoms, nearly allied to *L. calyx* Lend., p. 357, pl. xv, fig. 1, a-c; *L. variabilis* Pol., from Funafuti, 25-80 fathoms, pp. 356 & 357: KIRKPATRICK (28).

## (b) DENDROCERATINA.

*Dendroceratina*, nom. nov. for order *Hexaceratina* Lendenfeld pars, with diagnosis; MINCHIN (47) p. 154.

## Family APLYSILLIDÆ.

Diagnosis of family, with list of genera; MINCHIN (47) p. 154.

## (iv) MYXOSPONGIDA.

Diagnosis; MINCHIN (47) p. 154.

## Family OSCARELLIDÆ.

Diagnosis of family, and list of genera; MINCHIN (47) p. 154.

## Family HALISARCIDÆ.

Diagnosis of family, and list of genera; MINCHIN (47) p. 154.

## E. OCTACTINELLIDA.

Diagnosis; MINCHIN (47) p. 156: order not accepted, the single genus *Astræospongia* regarded as an aberrant Hexactinellid; ZITTEL (82) p. 56.

† *Astræospongia* Roem., genus defined; *A. meniscus* Bumb., figured: ZITTEL (82) p. 56, fig. 72.

## F. HETERACTINELLIDA.

Diagnosis, and list of genera; MINCHIN (47) p. 156: order not accepted, the genera regarded as aberrant Hexactinellids; ZITTEL (82) p. 56.

† *Asteractinella* Hinde, genus defined; *A. expansa*, spicule figured: ZITTEL (82) p. 56, fig. 71.

† *Tholiasterella* Hinde, genus defined; *T. gracilis* Hinde, spicules figured: ZITTEL (82) p. 56, fig. 70.

## G. INCERTÆ SEDIS.

† *Achilleum rugosum* Roem.; ZAHÁLKA (78) pp. 13, 51, 92, 100: ZAHÁLKA (79) pp. 22, 27, 36.

† *Amorphospongia globosa* v. Hag.; ZAHÁLKA (79) pp. 9, 25, 27, 36, 44-48. † *A. rugosa* Roem.; ZAHÁLKA (78) p. 28: ZAHÁLKA (79) pp. 17, 24, 25.

† *Cylindrites spongioides* Goepf. [a sponge]; FUGGER (18) p. 393.

† *Ranffella* (?) *fucoida*, n. sp., from Saint Peter Sandstone; SARDESON (56) p. 78, pl. iv, figg. 5 & 6.

- †*Scyphia parvula* Rsa.; ZAHÁLKA (79) p. 44.  
†*Solidinodus poctei* Zah.; ZAHÁLKA (79) pp. 10-12, 15, 18, 21, 25, 27, 29, 36.  
†*Spongia paradoxa*, from Red Chalk, is not a sponge; JUKES-BROWNE & HILL (25) p. 303.  
†*Spongia saxonica* Gein.; FUGGER (18) p. 393. †*Spongites saxonicus* Gein.; ZAHÁLKA (78) pp. 30 & 92.  
†*Stromatopora* [sic, as a sponge genus]; *S.* sp., pp. 20, 21, 24, 29, 31; *S. mammillata* Nich., pp. 24 & 31; *S. ponderosus* Nich., p. 24: BOWNOCKER (5).  
†“*Syringostroma columnaris* Nich.” [a sponge], pp. 27, 31; “*S. densa* Nich.” p. 33; BOWNOCKER (5).  
†*Tragos globularis*; ZAHÁLKA (79) p. 13.





# XVIII. PROTOZOA.

BY

ALBERT WM. BROWN, B.A., F.L.S.

## CONTENTS.

	Page		Page
INTRODUCTION . . . . .	1	IV. SYSTEMATIC	
I. TITLES . . . . .	2	Gymnomyxa	
II. BIOLOGY		Proteomyxa	
1. Morphology . . . . .	10	Labyrinthulidea } (vacant)	
2. General Biology and Physiology . . . . .	11	Lobosa . . . . .	14
3. Embryology . . . . .	11	Heliozoa . . . . .	15
4. Classification . . . . .	12	Foraminifera . . . . .	15
5. Distribution . . . . .	12	Radiolaria . . . . .	23
6. Methods . . . . .	12	Corticata	
7. Pathology . . . . .	12	Sporozoa . . . . .	25
8. Miscellaneous . . . . .	13	Flagellata . . . . .	26
III. DISTRIBUTION		Dinoflagellata . . . . .	26
1. Geographical . . . . .	13	Rhynchoflagellata (vacant)	
2. Geological . . . . .	13	Ciliata . . . . .	26
3. Parasitic . . . . .	14	Acinetaria . . . . .	27

## INTRODUCTION.

AFTER a steady decline for some years, the number of titles recorded this time shows a slight increase. The systematic literature consists principally of papers dealing with the *Foraminifera* and *Radiolaria* of which a large number of Fossil forms have been described. The most important work of the year has however been done on the Sporozoa. The researches of LAVERAN, MESNIL, and LÉGER have added considerably to our knowledge whilst the remarkable forms described by STOLC are worthy of close attention. SAND has published an exhaustive monograph on the Tentaculifera.

Recent discoveries on the Hæmatozoa, especially in relation to disease, have opened up a wide field for research of which many have taken advantage. The discoveries of the relation of the Hæmatozoa to Malarial fever afford a strong justification of the utility of Biological Science. Experiments now in progress with a view to stamping out the disease are being watched with great interest and it is probable that future years will see the pathological relations of Protozoa vigorously investigated.

# I. TITLES.\*

1. ALCOCK, A. W. A Summary of the Deep-sea Zoological Work of the Royal Marine Survey Ship "Investigator" from 1884-1897. Calcutta, 4to, pp. 49.  
Reprinted from Mem. Med. Officers Army India, xi.
2. AMBERG, C. Arbeiten aus dem botanischen Museum des eidg. Polytechnikums. I. Beiträge zur Biologie des Katzenses. Vierteljahrscr. Ges. Zurich 1900, pp. 59-136, pls. ii-vi.
3. [ANON.] Report of the *Malaria* Expedition to Sierra Leone. [Article on the Report.] Nature lxi, p. 614.
4. AURIVILLIUS, C. W. S. Animalisches Plankton aus dem Meere zwischen Jan Mayen, Spitzbergen, K. Karls Land und der Nordküste Norwegens. Svenska Ak. Handl. xxii, No. 6, pp. 69.
5. BASILI, A. Fecondazione ed immunità per il *Proteosoma* nel *Culex pipiens*. Rend. Acc. Lincei ix, Sem 2°, pp. 362-364.
6. BILLET, A. Sur un hématozoaire endoglobulaire des *Platydictylus*. C.R. Soc. Biol. 1900, pp. 547-549.
7. BLANCHARD, R. Les Coccidies et leur rôle pathogène. Caus. Soc. zool. France 1900, No. 5, pp. 133-172, 12 figg. in text.
8. BONNET-EYMARD, G. Sur l'évolution de l'*Eimeria nova* (Schneider). C.R. Soc. Biol. 1900, pp. 659-661.
9. BORGERT, A. Untersuchungen über die Fortpflanzung der triptyleen Radiolarien, speciell von *Aulacantha scolymantha* H. I Theil. Zool. Jahrb. Anat. xiv, pp. 203-276, pls. xiv-xviii and 33 figg. in text.
10. BOSC, F. J. De la culture de parasites (Cancer, vaccine, clavelée, coccidie oviforme) dans le sang rendu incoagulable. C.R. Soc. Biol. 1900, pp. 1053-1055.
11. BOURNE, G. C. An introduction to the study of the comparative anatomy of animals. Vol. I. Animal Organisation. The *Protozoa* and *Coelenterata*. London, 8vo, pp. xvi & 269, 53 figg. in text.
12. \*BUFFARD, M. & SCHNEIDER, G. La dourine et son parasite. La Semaine Med. 1900, No. 34.  
[Abstr. in Centrbl. Bakter. xxviii, p. 882.]  
— [See also SCHNEIDER & BUFFARD (143).]
13. CALKINS, G. N. *Lymphosporidium truttae*, nov. gen., nov. sp. The cause of a recent epidemic among Brook Trout, *Salvelinus fontinalis*. Zool. Anz. xxiii, pp. 513-520, 6 figg. in text.

---

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

14. CARLGREN, O. Ueber die Einwirkung des constanten galvanischen Stromes auf niedere Organismen. Arch. Physiol. 1900, pp. 49-76, 465-480, pl. i.
15. CASTLE, W. E. Some North American fresh-water *Rhynchobdellidae* and their Parasites. Bull. Mus. Harvard xxxvi, No. 2, pp. 15-64, pls. i-viii.
16. CAULLERY, M. & MESNIL, F. Sur un mode particulier de division nucléaire chez les grégaires. Arch. anat. micr. iii, pp. 146-167, pl. ix.
17. CERTES, A. Colorabilité élective "intra vitam" des filaments sporifères du *Spirobacillus gigas* (Cert.) et de divers microorganismes d'eau douce et d'eau de mer par certaines couleurs d'aniline. C.R. Ass. Franc. 1900, 2<sup>e</sup> part, pp. 714-722, pls. vii-ix.
18. CHAPMAN, F. Tertiary Foraminiferal Limestones from Sinai. Geol. Mag. vii, 1900, pp. 308-316, 367-374, pls. xiii & xiv.
19. —. On some New and Interesting *Foraminifera* from the Funafuti Atoll, Ellice Islands. J. Linn. Soc. xxviii, pp. 1-27, pls. i-iv.
20. —. On some *Foraminifera* of Tithonian Age from the Stramberg Limestone of Nesselsdorf. T. c. pp. 28-32, pl. v.
21. —. *Foraminifera* from the Lagoon at Funafuti. T. c. pp. 161-210, pls. xix & xx.
22. —. *Foraminifera* from an Upper Cambrian Horizon in the Malverns; together with a note on some of the earliest known *Foraminifera*. Quart. J. Geol. Soc. lvi, pp. 257-263, pl. xv.
23. —. List of the *Foraminifera* from the Boat Channel, Flying Fish Cove, Christmas Island, 11 fathoms. In ANDREWS and others "On the Marine Fauna of Christmas Island (Indian Ocean)." P. Zool. Soc. London 1900, p. 141.
- [See also JONES & CHAPMAN (72).]
24. CHATIN, J. Altérations nucléaires dans les cellules coccidiées. C.R. Soc. Biol. 1900, pp. 345 & 346.
25. CHRISTOPHERS, S. R. & STEPHENS, J. W. W. Note on Certain Bodies found in the Glands of two species of *Culex*. Further Reports to the Malaria Committee of the Royal Society, 1900, pp. 20 & pl.
26. — & —. Report from the West Coast of Africa. Op. cit. 3rd Series, pp. 1-24, pl. and maps.
27. CLEVE, P. T. Plankton collected by the Swedish Expedition to Spitzbergen in 1898. Svenska Ak. Handl. xxii, Art. 3, pp. 51, 4 pls.
28. —. Plankton Researches in 1897. T. c. No. 7, pp. 33.
29. —. The Plankton of the North Sea, the English Channel and the Skagerak in 1898. T. c. No. 8, pp. 53, figg. in text.
30. —. Plankton from the Red Sea. Ofv. Ak. Forh. lvii, pp. 139-144.
31. —. Plankton from the southern Atlantic and the southern Indian Ocean. T. c. pp. 919-938.
- CONTE, A. [See VANEY & CONTE (156).]
32. \*COSTAMAGNA, S. Ricerche intorno alla digestione nei Cigliati mediante il rosso-neutro (Neutralroth). Atti Acc. Torino xxxiv, pp. 1035-1044, 1899.

33. CRAWLEY, H. A Flagellated Heliozoan. *Amer. Natural.* xxxiv, pp. 255-258, 2 figg. in text.
34. CUÉNOT, L. Recherches sur l'évolution et la conjugaison des grégarines. *Arch. Biol.* xvii, pp. 581-652, pls. xviii-xxi.
35. DANIELS, C. W. On transmission of Proteosoma to Birds by the Mosquito. *Royal Society Reports to the Malaria Committee, 1899-1900*, pp. 1-11.
36. —. Report from East Africa. Further Reports to the Malaria Committee of the Royal Society, 3rd series, pp. 25-45.
37. \*DANIELSOHN, P. Über die Einwirkung verschiedener Akridinderivate auf Infusorien. München, 8vo, 1899, 21 pp.
38. DERVIEUX, E. Nuove specie di Foraminiferi. *Atti Acc. Pont. Lincei* liii, pp. 87-90.
39. —. La *Lepidocyclina marginatu* (Michelotti). *Boll. Mus. Torino* xv, No. 380, 2 pp.
40. —. Osservazioni alle osservazioni sopra il nuovo genere di foraminiferi *Miogypsina* Sacco o *Flabelliporus* Dervieux. *Riv. ital. Pal.* vi, pp. 146-148.
41. DOFLEIN, F. Studien zur Naturgeschichte der Protozoen. iv. Zur Morphologie und Physiologie der Kern- und Zelltheilung. Nach Untersuchungen an *Noctiluca* und andern Organismen. *Zool. Jahrb. Anat.* xiv, pp. 1-60, pls. i-iv, figg. in text.
42. DOUVILLÉ, H. Sur la distribution géographique des rudistes, des orbitolines et des orbitoides. *Bull. Soc. géol. France* xxviii, pp. 222-235.
- DUBOSCQ, O. [See LÉGER & DUBOSCQ (101).]
43. EARLAND, A. A list of the fossil *Radiolaria* from Barbados, figured in Ehrenberg's "Fortsetzung der mikrogeologischen Studien" with the equivalent Names used by Häckel. *J. Quekett Club*, Ser. ii, vol. vii, pp. 285-294.
44. —. *Radiolaria*. T. c. pp. 257-284, pls. xv & xvi.
45. EDWARDS, A. M. The *Radiolaria*. *Amer. Micr. J.* xxi, pp. 211-217.
46. —. *Peridiniae*. T. c. pp. 224-226.
47. —. *Amæba* having no vitality. T. c. pp. 275-279.
48. EGGER, J. G. Foraminiferen und Ostracoden aus den Kreidemergeln der oberbayerischen Alpen. *Abh. Bayer. Ak.* xxi, pp. 1-230, pls. i-xxvii.
49. EMBLETON, ALICE L. *Goidelia japonica*—a new Entozoic Copepod from Japan associated with an Infusorian (*Trichodina*). *J. Linn. Soc.* xxvii, pp. 211-229, pls. xxi & xxii.
50. FAJARDO, F. Die Hämatozoarie des Beri-beri im Gehirn. *Centrbl. Bakter.* xxvii, pp. 249-251, 1 pl.
51. \*FEARNSIDE, C. J. An unsuspected *Hæmamæba* found in chronic malariæ. *Indian Med. Gaz.* 1899, pp. 311-313.
- FIELDING-OULD, R. [See ROSS & FIELDING-OULD (134).]
52. \*FISCHER, A. Fixierung, Färbung und Bau des Protoplasmas. Jena, 1899.

53. FLORENTIN, R. Description de deux infusoires ciliés nouveaux des mares salées de Lorraine suivie de quelques considérations sur la faune des lacs salés. Ann. Sci. nat. xii, pp. 343-363, pl. xv.
54. FORNASINI, C. Le Polinorfine e le Uvigerine fossili d' Italia. Boll. Soc. geol. Ital. xiv, pp. 132-172.
55. FUHRMANN, O. Beitrag zur Biologie des Neuenburger Sees. Biol. Centrbl. xxii, pp. 85-96, 120-128.
56. \*GALLI-VALERIO, B. Notes de parasitologie. Centrbl. Bakter xxvii, pp. 305-309.
57. GIARD, A. Sur un protozoaire nouveau de la famille des *Gromidae*. (*Amæbogromia cinnabarina* Gd.) C.R. Soc. Biol. 1900, pp. 377 & 378.
58. GIGLIO-TOS, E. Un parasite intranucléaire dans les reins du rat des égoûts. Arch. ital. Biol. xxxiv, pp. 36-42.
59. \*GRAHAM, H. G. The *Amæba ciliaria* in disease. N. York Med. J. lxx, pp. 477-482, 515-520.
60. GRASSI, B. Studi ulteriori sulla malaria. Rend. Acc. Lincei ix, Sem. 2°, pp. 115-124.
61. GÜNTHER, A. Weitere Beiträge zur Kenntniss des feineren Baues einiger Infusorien aus dem Wiederkäuermagen und dem Coecum des Pferdes. Zeitschr. wiss. Zool. lxvii, pp. 640-662, pls. xxxvi & xxxvii.
62. HAGENMÜLLER, P. Bibliotheca Sporozoologica. Bibliographie générale et spéciale des travaux concernant les Sporozoaires parus antérieurement au 1<sup>er</sup> Janvier, 1899. Bull. Mus. Marseille i, Supplément, 233 pp.
63. HANITSCH, P. Mosquitos and Malaria. Nature lxi, p. 177. [Letter to the Editor.]
64. HINDE, G. J. Fossil *Radiolaria*. Geol. Mag. vii, pp. 29-33. [A Review of recent work.]
65. HOLMES, W. M. On *Radiolaria* from the Upper Chalk at Coulsdon (Surrey). Quart. J. Geol. Soc. lvi, pp. 694-704, pls. xxxvii & xxxviii.
66. ISHIKAWA, C. Further Observations on the Nuclear Division of *Noctiluca*. J. Coll. Japan xii, pp. 243-262, pl. xix.
67. ISSEL, R. Osservazioni sopra alcuni animali della fauna termale italiana. Atti Soc. Ligustica xii, pp. 59-73, pls. i & ii.
68. IWANOFF, L. Beitrag zur Kenntniss der Morphologie und Systematik der Chrysomonaden. Bull. Ac. St. Petersb. xi, pp. 247-262, 1 pl.
69. —. Über neue Arten von Algen und Flagellaten, welche an der biologischen Station zu Bologoye gefunden worden sind. Bull. Soc. Moscou xiv, pp. 423-449, pls. xii & xiii.
70. JENNINGS, H. S. Reactions of Infusoria to chemicals: A criticism. Amer. Natural. xxxiv, pp. 259-265.
71. JONES, T. R. Catalogue of the known *Foraminifera* from the Chalk and Chalkmarl of the South and South-Eastern Counties of England. Geol. Mag. vii, pp. 225-229.
72. — & CHAPMAN, F. On the *Foraminifera* of the Orbitoidal Rocks and Reef Rocks of Christmas Island, pp. 226-264, pls. xx & xxi, in Andrews, C. W., A Monograph of Christmas Island (Indian Ocean) London, 8vo, 1900.

73. JØRGENSEN, E. Protistenplankton aus dem Nordmeere in den Jahren 1897-1900. Bergens Mus. Aarbog 1900, Art. No. vi, pp. 1-37, 3 pls.
74. \*JOUKOWSKY, D. Beiträge zur Frage nach den Bedingungen der Vermehrung und des Eintritts der Conjugation bei den Ciliaten. Heidelberg, 1898, 8vo, 27 pp.
75. KIAER, H. Thalamophora. Den Norske Nordhavs-Expedition 1876-1878, xiv. Zoologist, pp. 1-13, pl. i & chart.
76. KOFOID, C. A. Plankton Studies. II. On *Pleodorina illinoisensis*, a new species from the Plankton of the Illinois River. Ann. Nat. Hist., Ser. 7, vol. vi, pp. 139-156, pls. v & vi.  
Previously published in Bull. Illinois Lab. v, pp. 273-293.
77. —. Plankton Studies. III. On *Platydorina*, a new genus of the Family *Volvocidae* from the Plankton of the Illinois River. T. c. pp. 541-558, pl. vii.  
Previously published in Bull. Illinois Lab. v, pp. 419-440.
78. LAKOWITZ, —. Die niedersten Pflanzen- und Thierformen des Klostersees bei Karthaus. Schr. Ges. Danzig x, pp. 58 & 59.
79. LANKESTER, E. RAY. Note on the morphological significance of the various phases of *Hæmamebideæ*. Quart. J. Micr. Soc. xliii, pp. 581-588, figg. in text.
80. LAVERAN, A. Au sujet de l'hématozoaire endoglobulaire de *Padda oryziroza*. C.R. Soc. Biol. 1900, pp. 19 & 20.
81. —. Dégénérescence granuleuse des hématies de l'hippocampe. T. c. pp. 353 & 354.
82. —. Au sujet des altérations cellulaires produites par les coccidies. T. c. pp. 378-380.
83. —. Sur une méthode de coloration des noyaux applicable en particulier à l'étude des hématozoaires endoglobulaires. T. c. pp. 549-551.
84. —. Sur une cause d'erreur dans l'examen du sang contenant des microbes et des hématozoaires endoglobulaires en particulier. T. c. pp. 679-681.
85. — & MESNIL, F. Sur quelques particularités de l'évolution d'une grégarine et la réaction de la cellule-hôte. T. c. pp. 554-557.
86. — & —. Sur une Myxosporidie des voies biliaires de l'hippocampe. T. c. pp. 380-382.
87. — & —. De la longue conservation à la glacière des trypanosomes du rat et de l'agglomération de ces parasites. T. c. pp. 816-819.
88. — & —. Sur l'agglutination des trypanosomes du rat par divers sérums. T. c. pp. 939-942.
89. — & —. Sur le mode de multiplication du trypanosome du rat. T. c. pp. 976-980, figg. in text.
90. LEBLANC, P. Parasites endoglobulaires du chien. Nature de l'ictère infectieux du chien. T. c. pp. 70 & 71.
91. —. *Piroplasma canis*. Ictère infectieux du chien. T. c. pp. 168 & 169.
92. LÉGER, L. Sur la morphologie et la développement des microgamètes des coccidies. Arch. Zool. exp. 1898, No. 2, pp. 1-7.

93. [LÉGER, L.] Sur un nouveau Sporozoaire des larves de Diptères. C.R. Ac. Sci. cxxxi, pp. 722-724.
94. —. La reproduction sexuée chez les *Ophryocystis*. T. c. pp. 761-763.
95. —. Sur un organisme parasite de l'intestin d'*Olocrates gibbus* Fab. C.R. Soc. Biol. 1900, pp. 261 & 262.
96. —. Sur l'évolution de *Raphidospora le danteci* Léger. T. c. pp. 262 & 263.
97. —. Sur le genre *Eimeria*. T. c. pp. 575 & 576.
98. —. Le genre *Eimeria* et la classification des Coccidies. T. c. pp. 576 & 577.
99. —. Sur un nouveau sporozoaire des larves de Diptères. T. c. pp. 868-870.
100. —. La reproduction sexuée chez les *Ophryocystis*. T. c. pp. 927-930.
101. — & DUBOSCQ, O. Les Grégaires et l'épithélium intestinal. C.R. Ac. Sci. cxxx, pp. 1566-1563.
102. \*LENKOWICZ, X. Zur Biologie der Malaria-Parasiten. Wien. klin. Wochenschr. 1900, pp. 206-209, 233-240.
103. LO MONACO, D. & PANICHI, L. Sul fenomeno dell' agglutinazione nel sangue dei malarici. Rend. Acc. Lincei ix, Sem. 2<sup>o</sup>, pp. 364-373.
104. — & —. L'action des médicaments antipériodiques sur le parasite de la malaria. Arch. ital. Biol. xxxiii, pp. 373-387.
105. LÖRENTHEY, . Foraminiferen der paannonischen Stufe Ungarns. N. Jahrb. Min. 1900, ii, pp. 9-107.
106. LÜHE, M. Ergebnisse der neueren Sporozoenforschung. Zusammenfassende Darstellung, mit besonderer Berücksichtigung der Malaria-Parasiten und ihre nächsten Verwandten. Centrbl. Bakter. xxvii, pp. 367-384, figg. in text, pp. 436-460, figg. in text, xxviii, pp. 205-209, 258-264, 316-324, 384-392.
107. —. *Cytodiscus immersus* Lutz. Verh. Deutsch. zool. Ges. ix, pp. 291-293, 1 fig. in text.
108. MADSEN, V. The pleistocene Foraminifera of Slesvick and Holstein. Medd. Dansk Geol. For. vi, pp. 45-56.
109. MARCHOUX, E. *Piroplasma canis* (Lav.), chez les chiens du Sénégal. C.R. Soc. Biol. 1900, pp. 97 & 98, figg. in text.
110. MARPMANN, —. Kultur und Nachweis von Amöben. Zeitschr. ang. Mikr. v, pp. 325-338, figg. in text.
111. MARSH, C. D. The Plankton of Fresh-water Lakes. Science xi, pp. 374-389.
112. MAURER, G. Die Tüpfelung der Wirtszelle des Tertianaparasiten. Centrbl. Bakter. xxviii, pp. 114-125, pl.
113. MESNIL, F. Sur la conservation du nom générique *Eimeria* et la classification des Coccidies (A propos des communications de M. L. Léger faites à la précédente séance). C.R. Soc. Biol. 1900, pp. 603 & 604. [Cf. LÉGER (98).]

[MESNIL, F.] [See also CAULLERY & MESNIL (16) and LAVERAN & MESNIL (85-89).]

115. MILLETT, F. W. Report on the Recent Foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S., Pt. vii, pp. 6-13, pl. i, Pt. viii, pp. 273-281, pl. ii, Pt. ix, pp. 539-549, pl. iv, J. R. Micr. Soc. 1900.
116. \*MILLIAN, C. Les sporozooses humaines. Paris, 8vo, pp. 91, 1899.
117. MILLS, F. W. Recent Foraminifera of the River Humber. Tr. Hull Club i, pp. 142-151, pls. x & xi.
118. MINKIEWICZ, R. Note sur le saison-dimorfisme chez le *Ceratum furca* Duj. de la mer Noire. Zool. Anz. xxiii, pp. 545 & 546.
119. —. Petites études morphologiques sur le "limnoplanton." T. c. pp. 618-623, 3 figg. in text. See also Trav. Soc. Nat. St Petersburg. 1898, xxix.
120. \*MORTON, F. S. The Foraminifera of the Marine Clays of Maine. P. Portland Soc. ii, 1897, pp. 105-122, pl. i.
121. \*MRAZEK, A. Sporozoenstudien. II. *Glugea lophii*. 8vo, 8 pp., 1 pl., Prag, 1899.
122. \*MULDER, M. E. *Blepharitis ciliaris* in *Acarus* of *Demodex folliculorum*. Ned. Tijdschr. v. geneest, 1899, ii, pp. 803-809.  
MURATET, P. [See SABRAZÈS & MURATET (138 & 139).]
123. NEVEU-LEMAIRE, M. L'hématozoaire du paludisme. Pathologie—Étiologie—Prophylaxie. Caus. Soc. zool. France 1900, pp. 1-24, 2 pls., 11 figg. in text.
124. NEVIANI, A. Supplemento alla Fauna a Radiolari delle roccie mesozoiche del Bolognese. Bull. Soc. geol. Ital. xix, pp. 644-671, pls. ix & x.  
PANICHI, L. [See LO MONACO & PANICHI (103 & 104).]
125. PENARD, E. Expériences sur des pseudopodes détachés de Rhizopodes. Arch. Soc. Phys. Nat. Geneve viii, p. 90.
126. —. Essais de mérotomie sur quelques diffugies. Rev. Suisse Zool. viii, pp. 477-490.
127. \*PLENGE, H. Ueber die Verbindungen zwischen Geissel und Kern bei den Schwärmerzellen der Mycetozoen und bei Flagellaten und über die an Metazoen angefundenen Beziehungen der Flimmerapparate zum Protoplasma und Kern. 8vo, 60 pp., Marburg, 1899 (Inaug. diss.).
128. PROCHÁZKA, V. J. Das Ostböhmisches Miocæn. Arch. Landesdf. Bohmen x, No. 2, pp. 1-172, 72 figg. in text.
129. —. Miocénové ostrovy v krasu Moravském. Rozp. Cesk. Ak. Praze viii, Art. 41, pp. 37.
130. \*PROTEAT, W. L. Leidy's Genus *Ouramæba*. P. Amer. Ass. 1898, pp. 361 & 362.
131. PROWAZEK, L. Cystenbildung bei den Protozoen. Zeitschr. ang. Mikr. v, pp. 269-274, pl. ix.
132. PÜTTER, A. Studien über Thigmotaxis bei Protisten. Arch. Physiol. Suppl. Band, 1900, pp. 243-302.



133. ROSS, R. Malaria and Mosquitos. *Nature* lxi, pp. 522-527.  
Report of a Lecture delivered at the Royal Institution of Great Britain on March 2nd, 1900.
134. — & FIELDING-OULD, R. Diagrams illustrating the life-history of the parasites of Malaria. *Quart. J. Micr. Soc.* xliii, pp. 571-579, pls. xxx & xxxi.
135. ROUX, J. Note sur les infusoires ciliés du lac Léman. *Rev. Suisse Zool.* viii, pp. 459-465.
136. \*RUGE, R. Zur Diagnosefärbung der Malariaparasiten. *Deutsch. med. Wochenschr.* 1900, pp. 447 & 448.
137. \*—. Ein Beitrag zur Chromatinfärbung der Malariaparasiten. *Zeitschr. Hygiene* xxxiii, pp. 178-184.
138. SABRAZES, J. & MURATET, L. Hématozoaires endoglobulaires de l'Hippocampe. *C.R. Soc. Biol.* 1900, pp. 320-322, figg. in text.
139. — & —. Corpuscles mobiles endoglobulaires de l'hippocampe. *T. c.* pp. 365-367.
140. SAND, R. Étude monographique sur le groupe des infusoires tentaculifères. *Ann. Soc. Belge Micr.* xxiv, pp. 57-189, pls. i-viii, xxv, pp. 5-205, pls. 9-16.
141. \*SCHAUDINN, F. Untersuchungen über die Generationswechsel von *Trichocephalum sieboldi* Sch. Berlin, 1899, 4to, 6 pls., 93 pp.
142. SCHLUMBERGER, C. Note sur le genre *Miogypsina*. *Bull. Soc. geol. France* xxviii, pp. 327-333, pls. ii & iii.
143. SCHNEIDER, G. & BUFFARD, M. Le trypanosome de la dourine (Mal de coït). *Arch. parasit.* iii, pp. 124-133.
144. SCHRÖDER, B. Das Phytoplankton des Golfes von Neapel nebst vergleichenden Ausblicken auf das atlantischen Oceans. *Mt. Stat. Neapel* xiv, pp. 1-38, pl. i.
145. SCHUBERG, A. Zur Kenntniss des Theilungsvorgangs bei *Euplores paletta* Ehb. *Verh. Ver. Heidelb.* vi, pp. 276-283.
146. SCHUBERT, R. J. Bemerkungen über einige Foraminiferen der ostgalizischen Oberkreide. *Jahrb. geol. Reichsanst.* l, pp. 649-662, pl. xxvi, 3 figg. in text.
147. —. *Flabinnella*, ein neuer Mischtypus aus der Kreideformation. *Zeitschr. Deutsch. geol. Ges.* lii, pp. 551-553, 2 figg. in text.
148. —. Über die recente Foraminiferenfauna von Singapore. *Zool. Anz.* xxiii, pp. 500-502.  
SENN, G. [See WASIELEWSKI & SENN (160).]
149. SILVESTRI, A. Nuove osservazione sulla *Biloculina globosa* e sulla *vas cristata* de *Peneroplis pertusus*. *Atti. Acc. Pont. Lincei* lii, pp. 63-73, figg. in text.
150. —. Una importante questione di nomenclatura zoologica. *Op. cit.* liii, pp. 77-86.
151. \*SMITH, F. E. *Pseudomonas stewarti*. *P. Amer. Ass.* xlvii, pp. 422-426.
152. SMITH, J. Palaeozoic Radiolarians and Radiolarian Chert. *Tr. geol. Soc. Glasgow* xi, pp. 245-249.  
STEPHENS, J. W. W. [See CHRISTOPHERS & STEPHENS (25 & 26).]

153. STOLC, A. Actinomyxidia nova skupina Mesozoú, přibuzná Myxosporidíum. Rozp. Ceske Ak. Praze viii, Art. 22, pp. 12, 3 pls.
154. SWIDKES, J. Die miocänen Foraminiferen der Umgebung von Kolomea. Verh. Ver. Brunn xxxviii, pp. 261-273.
155. VALLENTIN, R. Notes on the fauna of Falmouth from 1st of January to 10th of September, 1898, and from May, 1899 to the end of that year. J. Inst. Cornwall xiv, pp. 196-209, and Chart.
156. VANEX, C. & CONTE, A. Sur deux nouveaux sporozoaires endospores, parasites de l'*Acerina cernua* Cuv. Ann. Soc. Linn. Lyon xlvii, pp. 103-106, figg. in text.
157. VIGNON, P. Les cils vibratiles. Caus. Soc. zool. France 1900, No. 3, pp. 37-76, 8 figg. in text.
158. VOIRIN, V. Zur Morphologie und Biologie einiger Coccidienformen, *Coccidium oviforme* Leuckhart, und *Coccidium fuscum* Olb. Beiträge zur Kenntniss der Coccidien. Zool. Jahrb. Anat. xiv, pp. 61-106, pl. v.
159. WALLENGREN, H. Übersicht von der Gattung *Lagenophrys* St. Biol. Centrbl. xx, pp. 358-363.
160. \*WASIELEWSKI, & SENN, G. Beiträge zur Kenntniss der Flagellaten des Rattenblutes. Zeitschr. Hygiene xxviii, pp. 444-472.
161. WESENBERG-LUND, —. Von dem Abhängigkeitsverhältnis zwischen dem Bau den Planktonorganismen und dem spezifischen Gewicht des Süßwassers. Biol. Centrbl. xx, pp. 606-619, 644-656.
162. WILLIAMS, S. R. The specific gravity of some freshwater animals in relation to their habits, development and composition. Amer. Natural. xxxiv, pp. 95-108.
163. WILSON, H. V. Notes on a Species of *Pelomyxa*. Amer. Natural. xxxiv, pp. 535-550, 11 figg. in text.
164. WRIGHT, J. The *Foraminifera* of Dog's Bay, Connemara. Irish Natural. ix, pp. 51-55, pl. ii.
165. \*WRIGHT, J. H. & BROWN, L. S. Photographs of malarial parasites. J. Boston Soc. Med. Sci. 1899, Oct., p. 10.
166. ZACHARIAS, O. *Trichodina pediculus* Ehrb., als Mitglied des Planktons der Binnenseen. Biol. Centrbl. xx, p. 463.
167. ZYKOFF, W. Das Potamoplankton der Wolga bei Saratow. (Vorläufige Mittheilung.) Zool. Anz. xxiii, pp. 625-627.

## II. BIOLOGY.

### 1. MORPHOLOGY and ANATOMY.

- Morphology of the *Chrysomonads*; IWANOFF (68).  
 Morphology of *Coccidium oviforme* and *C. fuscum*, p. 68; VOIRIN (158).  
 Morphology of the microgametes of *Coccidia*; LÉGER (92).  
 Morphological significance of the various phases of the *Hæmamoebidæ*; LANKESTER (79).  
 Structure of *Radiolaria*; EARLAND (44) p. 257.  
 Structure of some Ciliata from the Alimentary Canal of the Horse; GÜNTHER (61).

- Structure of the *Tentaculifera*; SAND (140).  
 Structure of Protoplasm; FISCHER (52).  
 Morphological relations between cilia and pseudopodia; VIGNON (157).  
 Structure, insertion etc. of cilia in Protozoa; VIGNON (157).  
*Flagellata* of Rat's Blood; WASIELEWSKI & SENN (160).  
 Certain bodies found in the glands of two spp. of *Culex*; CHRISTOPHER & STEPHENS (25).  
 A Heliozoan with flagella; CRAWLEY (33).  
 Proteosoma of *Culex pipiens*; BASILI (5).

## 2. GENERAL BIOLOGY and PHYSIOLOGY.

- Biology of Malaria parasites; LEUKOWICZ (102).  
 Relation between the structure of Plankton organisms and specific gravity of Fresh-water; WESENBERG-LUND (161).  
 Specific gravity of some *Protozoa* in relation to habits; WILLIAMS (162).  
 Seasonal dimorphism of *Ceratium furca*; MINIEWICZ (118).  
 Formation of cysts in the *Protozoa*; PROWAZEK (131).  
 Agglutination of the Sporozoites of Malarial Parasites, p. 1; CHRISTOPHER & STEPHENS (26). Agglutination of the *Trypanosoma* of the rat by different serums; LAVERAN & MESNIL (88). Agglutination of blood of malarial patients; LO MONACO & PANICHI (103).  
 Experiments on the detached pseudopodia of Rhizopods; PENARD (125).  
 Attempts at 'Mérotomie' on some Diffugias; PENARD (126).  
 Thigmotaxis in *Protozoa*; PÜTTER (132).  
 Influence of a constant electric current on *Protozoa*; CARLGREN (14).  
 Influence of certain derivatives of Akridin on *Infusoria*; DANIELSOHN (37).  
 Action of antiperiodic drugs on malarial parasites; LO MONACO & PANICHI (104).  
 Reactions of *Infusoria* to Chemicals; JENNINGS (70).

## 3. EMBRYOLOGY.

- Formation of Buds in *Noctiluca*, p. 30; DOFLEIN (41).  
 Special mode of nuclear division in Gregarines; CAULLERY & MESNIL (16).  
 Nuclear division in *Noctiluca*, p. 7; DOFLEIN (41), ISHIKAWA (66).  
 Division of Sun Animalcules, p. 114; SPRAGUE, Tr. Scottish N. H. Soc. i, 1900.  
 Division of *Euplotes pauletta*; SCHUBERG (145).  
 Copulation of *Noctiluca*, p. 2, pls. i-iv; DOFLEIN (41).  
 Conjugation of the *Ciliata*; JOKOWSKY (74).  
 Reproduction of *Radiolaria tripplea* and especially of *Aulacantha scolymantha*; BORGERT (9).  
 Sexual reproduction in *Ophryocystis*; LÉGER (94 & 100).  
 Mode of multiplication of the *Trypanosoma* of the Rat; LAVERAN & MESNIL (89).  
 Reproductive changes in *Trichosphaerium sieboldi*; SCHAUDINN (141).  
 Life History of *Eimeria nova*; BONNET-EYMARD (8).  
 Life History of the Gregarines of *Lumbricus*, *Gryllus*, *Periplaneta*, pls. xviii-xxi; CUÉNOT (34).  
 Life History of *Radiolaria*; EARLAND (44) p. 271.  
 Life History of *Raphidospora*; LÉGER (96).  
 Development of the Microgametes of *Coccidia*; LÉGER (92).

*Ophryocystis* and *Schizocystis* in relation to classification LÉGER (100).

## 5. DISTRIBUTION (BIOLOGICAL)

Geographical distribution of *Orbitolineæ* and *Orbitoidæ*  
Distribution of *Radiolaria*; EARLAND (44), p. 277.  
Geographical distribution of *Thalamophora* in the  
KIAER (75).  
The Foraminiferan Fauna of Singapore; SCHUBERT  
Infusoria of Salt Lakes; FLORENTIN (53).  
Protozoa of Hot Springs of Italy; ISSEL (67).  
Plankton; AURIVILLIUS (4); CLEVE (27-31); JØRG  
(112). Limnoplankton; MINKIEWICZ (119). Phytoplankton  
of Naples; SCHRÖDER (144).

## 6. METHODS.

Cause of error in the examination of malarial blood  
Culture of *Amœba*; MARPMANN (111).  
Cultivation of *Coccidia* in blood rendered incoagulable  
Fixing and staining of Protoplasm; FISCHER (52).  
"Intra vitam" staining of *Protozoa*; CERTES (17).  
Absorption of Neutral Red by *Ciliata*; COSTAMAGNA  
Method of nuclear staining especially applicable  
LAVERAN (83).  
Staining of the Malarial Parasite; RUGE (136 & 137)  
Preservation of *Trypanosoma* of the Rat in ref  
& MESNIL (87).

## 7. PATHOLOGY, ETC.

Rôle of *Amœba ciliaria* in disease; GRAHAM (59).  
Pathogenic rôle of *Coccidia*; BLANCHARD (7).  
Pathology of the Malarial Parasite; NEVEU-LEMAIRE  
Transmission of *Proteosoma* to Birds by Mosquitoes;  
Recent epidemic in Brook Trout caused by a Sporozoan  
Disease of the Dog caused by endoglobular parasites

Cellular changes produced by *Coccidia*; LAVERAN (82).

Granular degeneration in the Hæmatids of *Hippocampus* in relation to *Sporozoa*; LAVERAN (81).

Malaria; ANON (3); CHRISTOPHER & STEPHENS (26); DANIELS (36); GRASSI (60); HANITSCH (63); MAURER (113). Malaria and Mosquitoes; ROSS (133).

## 8. MISCELLANEOUS.

Comparative list of the names used by Ehrenberg and Hæckel for spp. of Fossil *Radiolaria* from Barbados; EARLAND (43).

Review of Recent work on Fossil *Radiolaria*; HINDE (64).

Bibliography of the *Sporozoa*; HAGENMÜLLER (62).

## III. DISTRIBUTION.

### 1. GEOGRAPHICAL.

Spitzbergen: Plankton *Protozoa*, incl. 15 n. spp.; CLEVE (27).

Jan Mayen, Spitzbergen and N. Norway: Plankton *Crustacea*; AURILLIUS (4).

North Sea: n. sp. of *Cyttarocyclis*; JØRGENSEN (73).

North Sea, English Channel and Skagerak; CLEVE (29).

R. Humber: *Foraminifera*; MILLS (117).

Falmouth: *Protozoa*; VALLENTIN (155).

Dog's Bay, Connemara: *Foraminifera*; WRIGHT (164).

Laneuveville [Salt Lake]: n. sp. of *Strombidium*; FLORENTIN (53).

Lorraine [Salt Lake]: n. sp. of *Loxophyllum*; FLORENTIN (53).

Katzensee: *Protozoa*; AMBERG (2).

Klostersee, Karthaus: *Protozoa*; LAKOWITZ (78).

Neuenburger See: *Protozoa*; FUHRMANN (55).

Lake Léman: *Ciliata*; ROUX (135).

R. Volga [near Saratow]: Potamoplankton; ZYKOFF (167).

Bologoye: n. sp. of *Dinobryon*; IWANOFF (68): n. sp. of *Gonyostomum*; IWANOFF (69).

N. Atlantic: 3 n. spp. of *Foraminifera*; KLAER (75).

S. Atlantic and S. Indian Ocean: Plankton, *Protozoa* incl. 4 n. spp.; CLEVE (31).

Red Sea: Plankton *Protozoa* incl. n. sp. of *Dinophysis*; CLEVE (30).

Christmas Island [Boat Channel, Flying Fish Cove]: List of *Foraminifera*; CHAPMAN (23).

Malay Archipelago: *Foraminifera* incl. 13 n. spp.; MILLETT (115).

Singapore: *Foraminifera*; SCHUBERT (148).

Funafuti: *Foraminifera* incl. 6 n. spp.; CHAPMAN (19). *Foraminifera*, incl. 3 n. spp.; CHAPMAN (21).

### 2. GEOLOGICAL.

Pleistocene, Schleswig-Holstein: *Foraminifera*; MADSEN (108).

Tertiary, Sinai: *Foraminifera*; CHAPMAN (18).

Miocene, E. Hungary: *Protozoa*; PROCHÁZKA (128). Kolomea: *Foraminifera*; SWIDKES (154). Moravia: *Foraminifera*; PROCHÁZKA (129).

Mesozoic, Bologna: 63 n. spp. of *Foraminifera*; NEVIANI (124).

Cretaceous, Up. Bavarian Alps: *Foraminifera* incl. many n. spp.; EGGER (48).

- Upper Cretaceous, Coulsdon, Surrey : *Radiolaria* incl. 4 n. spp.; HOLMES (65).  
 E. Galicia, *Foraminifera* incl. n. sp.; SCHUBERT (146).  
 Chalk and Chalk Marl of S. and S.E. England : *Foraminifera*; JONES (71).  
 Palæozoic : *Radiolaria*; SMITH (182).  
 Limestone, Nesselzdorf : *Foraminifera* incl. n. sp. of *Valvulina*; CHAPMAN (20).  
 Upper Cambrian, Malvern Hills : *Foraminifera* incl. n. sp. of *Spirillina*; CHAPMAN (22).  
 Miscellaneous:—Marine Clays, Maine : *Foraminifera*; MORTON (120).  
 St Etienne d'Orthes : n. sp. of *Miogyssina*; SCHLUMBERGER (142).  
 Pannonian Stufe, Hungary : *Foraminifera*; LÖRENTHEY (105).  
 Candia : 2 n. spp. of *Foraminifera*; DERVIEUX (38).  
 Orbitoidal Rocks, Christmas Island : *Foraminifera*, incl. 4 n. spp.; JONES & CHAPMAN (72).  
 Barbados : List of Fossil *Radiolaria* figured by EHRENBURG; EARLAND (43).

### 3. PARASITIC.

- In *Acerina cernua* : 2 n. spp. of *Sporozoa*; VANEY & CONTE (156).  
 In *Canis* : *Piroplasma canis*; LEBLANC (91).  
 In *Ceratopogon* : n. sp. of *Schizocystis*; LÉGER (93).  
 In *Culex pipiens* : *Proteosoma*; BASILI (5).  
 In *Diptera* : n. sp. of *Sporozoa*; LÉGER (99).  
 In *Echiurus uncinatus* [Japan]; n. sp. of *Trichodina*; EMBLETON (49).  
 In *Gryllus* : n. sp. of *Gregarina*; CUÉNOT (34), p. 594.  
 In *Hippocampus* : n. sp. of *Myxosporidia*; LAVERAN & MESNIL (86).  
*Hæmatozoa*; SABRAZÈS & MURATET (138).  
 In *Homo* : *Sporozoa*; MILLIAN (116).  
 In Horse [cæcum] : *Ciliatu*; GÜNTHER (61).  
 In Intestinal epithelium : *Gregarinida*; LÉGER & DUBOSCQ (101).  
 In *Lumbricus* : n. sp. of *Monocystis*; CUÉNOT (34), p. 585.  
 In *Mus decumanus* [Renal cells] : *Karyamæba*, n. g.; GIGLIO-TOS (58).  
 In *Olocrates gibbus* : *Raphidospora* n. g.; LÉGER (95).  
 In *Padda oryzivora* : *Hæmatozoa*; LAVERAN (80).  
 In *Platydictylus* : *Hæmatozoa*; BILLET (6).  
 In *Psammoryctes barbatus* : n. g. of *Myxosporidian*; STOLC (153).  
 In *Rhynchobdellidæ* : *Sporozoa*; CASTLE (15).  
 In *Salvelinus fontinalis* : *Lymphosporidium*, n. g.; CALKINS (13).  
 In *Tubifex rivulorum* : 2 n. gg. of *Myxosporidia*; STOLC (153).

## IV. SYSTEMATIC.

### GYMNOMYXA.

#### PROTEOMYXA and LABYRINTHULIDEA.

(Vacant.)

#### LOBOSA.

- Amœba ciliaria*, rôle in disease, p. 477, GRAHAM, N. York Med. J. lxx.  
*Diffugia planctonica*, notes on forms, p. 618, MINKIEWICZ, Zool. Anz. xxxiii.  
*Pelomyxa carolinensis*, N. America, p. 535, WILSON, Amer. Natural. xxxiv,  
 n. sp.  
*Quadrula symmetrica*, in hot springs in Italy, p. 59, pl. i, fig. 1, ISSEL, Atti  
 Soc. Ligustica xii.

## HELIOZOA.

*Acanthocystis setifera*, and var. *bologoënsis*, descr., p. 621, MINKIEWICZ, Zool. Anz. xxiii.

## FORAMINIFERA.

- Amæbogramia*, n. g. of *Gromida* for *cinnabarina* Croy, p. 377, GIARD, C.R. Soc. Biol. 1900, n. sp.
- † *Ammodiscus incertus*, p. 29, pl. v, figg. 3 & 4, notes, CHAPMAN, J. Linn. Soc. xxviii. † *A. gaultinus*, p. 16, pl. i, figg. 1-3, 8, 9, 30, 31, *milletianus*, p. 17, pl. i, figg. 4-7, *serpuloides*, p. 17, pl. ii, figg. 20 & 21, var. *lacunosa*, p. 17, pl. xxii, fig. 35, EGGER, Abh. Bayer. Ak. xxi.
- † *Amphistegina fleuriausi*, p. 176, pl. xxi, figg. 31-38, EGGER, t. c.
- † *Anomalina ammonoides*, p. 152, pl. xviii, figg. 10-12, *lorneiana*, p. 152, pl. xviii, figg. 7-9, *complanata*, p. 153, pl. xviii, figg. 1-3, *kochi*, p. 153, pl. xviii, figg. 13-15, *moniliformis*, p. 153, pl. xviii, figg. 16-18, EGGER, t. c.
- † *Bathysiphon filiformis*, p. 16, pl. xxv, figg. 10-13, EGGER, t. c.
- Bdelloidina aggregata*, Funafuti, descr., p. 7, pl. i, fig. 3 and fig. in text, CHAPMAN, J. Linn. Soc. xxviii.
- Bifarina mackinnonii*, Malay Archipelago, p. 281, pl. ii, fig. 15, *elongata*, Malay Archipelago, p. 539, pl. iv, figg. 1 & 2, MILLETT, J. R. Micr. Soc. 1900, n. spp.
- Bigennerina digitata* var., Malay Archipelago, recorded outside Europe for first time, p. 6, pl. i, fig. 1, MILLETT, t. c.
- B. fimbriata*, p. 6, pl. i, figg. 2-4, *schlumbergerii*, p. 7, pl. i, figg. 5 & 6, both from Malay Archipelago, MILLETT, t. c.; *B. sarsi*, N. Atlantic, p. 12, pl. i, figg. 5 & 6, KIAER, Norske Nord. Exped. xxv : n. spp.
- Biloculina laevis*, N. Atlantic, p. 8, pl. i, figg. 15 & 16, KIAER, Norske Nord. Exped. xxv.
- † *B. globosa*, structure, p. 63, SILVESTRI, Atti Acc. Pont. Lincei lii.
- † *Bolivina elongata*, p. 44, pl. xvi, figg. 12 & 13, *textularioides*, p. 44, pl. xvi, figg. 1-3, *tegulata*, p. 45, pl. xvi, figg. 10 & 11, *reussi*, p. 45, pl. xvi, figg. 6, 7, 19, *incrassata*, p. 45, pl. xvi, figg. 4 & 5, var. *lata*, p. 46, pl. xvi, figg. 8 & 9, *decurrens*, p. 46, pl. xvi, figg. 17 & 18, *tenuis*, p. 46, pl. xvi, figg. 25 & 26, *linearis*, p. 46, pl. xiv, figg. 60 & 61, *draco*, p. 47, pl. xvi, figg. 14-16, EGGER, Abh. Bayer. Ak. xxi. *B. nobilis*, p. 541, pl. iv, fig. 4, *textularioides*, p. 542, pl. iv, fig. 5, *lobata*, p. 543, pl. i, fig. 4, *hantkeniana*, p. 546, pl. iv, fig. 9, *porrecta*, occurrence in Malay Archipelago and figure, p. 540, pl. iv, fig. 3, *karreriana*, var. *carinata*, nov., p. 546, pl. iv, fig. 8, *schwageriana*, p. 547, pl. iv, fig. 10, occurrence in Malay Archipelago and figg., MILLETT, J. R. Micr. Soc. 1900.
- B. convallaria*, p. 544, pl. iv, fig. 6, *durrandii*, p. 544, pl. iv, fig. 7, Malay Archipelago, MILLETT, J. R. Micr. Soc. 1900, n. spp.
- Bulima elegans*, p. 274, pl. ii, fig. 1, *fusiformis*, p. 275, pl. ii, fig. 2, *subornata*, p. 276, pl. ii, fig. 3, *elegantissima*, p. 276, pl. ii, fig. 4, var. *compressa*, p. 276, pl. ii, fig. 5, *subcylindrica*, p. 277, pl. ii, fig. 6, *marginata*, var. *biserialis*, p. 278, pl. ii, fig. 7, *williamsoniana*, p. 279, pl. ii, fig. 8, *convoluta*, p. 279, pl. ii, fig. 9, var. *nitida*, nov., p. 280, pl. ii, fig. 10, notes and figg. of forms from Malay Archipelago, MILLETT, J. R. Micr. Soc. 1900.
- † *Bulimina brevis*, p. 49, pl. xv, figg. 42 & 43, *ovata*, p. 49, pl. xv, fig. 45, *pupoides*, p. 49, pl. xv, figg. 1 & 2, *obtusa*, p. 50, pl. xv, fig. 51, *elegans*, p. 50, pl. xv, fig. 44, *ovulum*, p. 50, pl. xv, fig. 46, *intermedia*, p. 51, pl. xv, figg. 3 & 4, *murchisoniana*, p. 51, pl. xv, figg. 49 & 50, *acuta*, p. 51, pl. xxiv, fig. 46, *preslii*, p. 52, pl. xv, fig. 56, *trigona*, p. 52,

- pl. xxiv, figg. 16 & 17, *imbricata*, p. 52, pl. xv, fig. 48, *obesa*, p. 53, pl. xxiv, fig. 4, *puschi*, p. 53, pl. xxiv, figg. 5 & 6, *aculeata*, p. 53, pl. xv, figg. 5, 6, 21, EGGER, Abh. Bayer. Ak. xxi.
- Calcarina hispida*, var. *pulchella*, nov., p. 15, pl. i, fig. 10, CHAPMAN, J. Linn. Soc. xxviii.
- +*C. calcitrapoides*, p. 167, pl. xvii, figg. 18 & 38, xxii, fig. 36, EGGER, Abh. Bayer. Ak. xxi.
- +*C. rotula*, p. 168, pl. xxv, figg. 39-50 and 57, EGGER, t. c., n. sp.
- Carpenteria utricularis*, p. 12, pl. ii, fig. 4, pl. iv, figg. 3 & 4, *balaniformis*, p. 13, pl. iv, figg. 1 & 2, *monticularis*, p. 14, pl. ii, fig. 5, pl. iv, figg. 5 & 6, notes and distribution at Funafuti, *proteiformis*, p. 195, figured, pl. xix, fig. 11, CHAPMAN, J. Linn. Soc. xxviii.
- +*C. capitata*, p. 246, pl. xx, fig. 7, JONES & CHAPMAN, in ANDREWS' "Christmas Island," n. sp.
- Chruhionina abyssorum*, N. Atlantic, p. 7, pl. i, figg. 1-4, KIAER, Norske Nord. Exped. xxv, n. sp.
- Chrysalidina dimorpha* form from Malay Archipelago figured, p. 12, pl. i, fig. 14, MILLETT, J. R. Micr. Soc. 1900.
- +*Clavulina tripleura*, p. 43, pl. xvi, figg. 47-49, *parisiensis*, p. 44, pl. xvi, figg. 22, 23, 50, 51, EGGER, Abh. Bayer. Ak. xxi.
- +*Cornuspira cretacea*, p. 18, pl. xxii, figg. 1 & 2, EGGER, t. c.
- +*Cristellaria bronni*, p. 31, pl. v, fig. 11, *calva*, p. 31, pl. v, fig. 12, *gibba*, p. 31, pl. v, fig. 13, *rotulata*, p. 32, pl. v, fig. 14, *cultrata*, p. 32, pl. v, fig. 15, CHAPMAN, J. Linn. Soc. xxviii.
- +*C. acutauricularis*, Upper Cambrian, Malverna, p. 259, pl. xv, fig. 9, CHAPMAN, Quart. J. Geol. Soc. lvi. +*C. marcki*, Upper Cretaceous, Galicia, p. 652, pl. xxvi, figg. 3-3c, *macrodisca*, var. *glabra*, Upper Cretaceous, Galicia, p. 654, pl. xxvi, figg. 5a & 5b, SCHUBERT, Jahrb. geol. Reichsanst. l. +*C. linearis*, p. 109, pl. xii, figg. 12 & 13, *angusta*, p. 109, pl. xii, figg. 10 & 11, *inclinata*, p. 110, pl. xii, figg. 20 & 21, *crepidula*, p. 110, pls. xxiii, figg. 21 & 22, xxv, figg. 27 & 28, *schloenbachii*, p. 110, pls. xii, figg. 3 & 4, xxiv, figg. 30 & 31, *intermedia*, p. 111, pl. xi, figg. 23 & 24, *cymboides*, p. 111, pl. xxv, figg. 29 & 30, *trunculata*, p. 111, pl. xii, figg. 18 & 19, *bononiensis*, p. 112, pl. xxv, figg. 4-6, *harpa*, p. 112, pl. xii, figg. 29 & 30, *tripleura*, p. 112, pl. xii, figg. 22-24, *gosa*, p. 112, pl. xii, figg. 16, 17, & 31-34, *lituola*, p. 113, pl. xi, figg. 31 & 32, *protosphæra*, p. 113, pl. xxiv, figg. 20 & 21, *grata*, p. 113, pl. xi, figg. 27 & 28, *complanata*, p. 114, pl. xi, figg. 29 & 30, *scitula*, p. 114, pl. xii, figg. 35-37, *planiuscula*, p. 114, pl. xii, figg. 7-9, *discrepans*, p. 115, pl. xii, figg. 1 & 2, *spachholtzi*, p. 115, pl. xxiv, figg. 10 & 11, *costulata*, p. 115, pl. xxiv, fig. 42, *gemmata*, p. 115, pl. xxiii, figg. 25 & 26, *lævigata*, p. 116, pl. xxiv, figg. 33 & 34, *navicula*, p. 116, pl. xii, figg. 3 & 4, *triangularis*, p. 117, pl. xii, figg. 5 & 6, *nuda*, p. 117, pl. xii, figg. 25 & 26, *lepida*, p. 117, pl. xii, figg. 27 & 28, *subalata*, p. 118, pl. xi, figg. 19 & 20, *sulcifera*, p. 118, pl. xxiii, figg. 19 & 20, *oligostegia*, p. 118, pl. xi, figg. 21 & 22, *lobata*, p. 119, pl. xi, figg. 15 & 16, *münsteri*, p. 119, pl. xi, figg. 25 & 26, *umbilicata*, p. 119, pl. xi, figg. 13 & 14, *williamsoni*, p. 120, pl. xi, figg. 7 & 8, *diademata*, p. 120, pl. xi, figg. 1 & 2, *baylei*, p. 120, pl. xi, figg. 9 & 10, *macrodisca*, p. 120, pl. xi, figg. 5 & 6, *gaultina*, p. 121, pl. xxiii, figg. 4-9, *exarata*, p. 121, pl. xxiv, figg. 8 & 9, *rotulata*, p. 122, pl. xi, figg. 3 & 4, *calcar*, p. 123, pl. xi, figg. 17 & 18, *cultrata*, p. 123, pl. xi, figg. 11 & 12, EGGER, Abh. Bayer. Ak. xxi.
- +*C. barbata*, p. 121, pl. xxiii, figg. 23 & 24, EGGER, t. c., n. sp.
- Cyclocypæus*, notes on the g., p. 21, *carpenteri*, notes on forms etc., p. 22, pls. ii, figg. 6 & 7, iii, figg. 1-5, CHAPMAN, J. Linn. Soc. xxviii.
- +*Cymbalopora poyei*, p. 167, pl. xix, figg. 28-30, EGGER, Abh. Bayer. Ak. xxi.



- †*Dimorphina ursula*, p. 123, pl. xxii, figg. 24 & 25, *minuta*, p. 124, pl. xxii, fig. 22, EGGER, t. c., n. spp.
- †*Discorbina arcuata*, p. 163, pl. xxiii, figg. 33–35, *araucana*, p. 163, pl. xxv, figg. 22–24, *vilardeboana*, p. 163, pl. xxv, figg. 7–9, *binkhorsti*, p. 164, pl. xviii, figg. 28–30, *nitens*, p. 164, pl. xviii, figg. 34–36, *schloenbachi*, p. 164, pl. xviii, figg. 19–21, *globosa*, p. 165, pl. xxi, figg. 38–40, *obtusata*, p. 165, pl. xix, figg. 13–15, *planoconvexa*, p. 165, pl. xxv, figg. 33–35, *rudis*, p. 166, pl. xix, figg. 22–24, *lenticula*, p. 166, pl. xviii, figg. 22–24, *regularis*, p. 167, pl. xx, figg. 38–40, EGGER, Abh. Bayer. Ak. xxi.
- Discorbina tubercapitata*, Funafuti, p. 11, pl. i, figg. 9a–c, CHAPMAN, J. Linn. Soc. xxviii, n. sp.
- †*Flabinella*, n. g. from Cretaceous descr. for *Fronicularia tetschensis*, p. 551, SCHUBERT, Zeitschr. Deutsch. geol. Ges. lii.
- †*F. budensis*, p. 107, pls. x, figg. 1 & 2, xiii, figg. 24 & 25, xx, figg. 19 & 20, *reticulata*, p. 107, pl. xiii, figg. 5–7, *rugosa*, p. 108, pls. x, figg. 5 & 6, xiii, figg. 1 & 2, *cordata*, p. 108, pl. x, fig. 21, *elliptica*, p. 109, pl. xxiv, figg. 1–3, EGGER, Abh. Bayer. Ak. xxi.
- †*Fronicularia angusta*, p. 86, pl. xiii, figg. 14, 15, 18, 19, *lanceola*, p. 87, pl. xv, figg. 9 & 10, *archiacana*, p. 87, pl. x, figg. 19 & 20, *angustissima*, p. 87, pl. xiii, figg. 3 & 4, *solea*, p. 88, pl. xv, figg. 7 & 8, *elegans*, p. 88, pl. xiii, fig. 20, *loryi*, p. 88, pl. xiii, figg. 8 & 9, *denticulo-carinata*, p. 89, pl. x, figg. 13 & 14, *ungeri*, p. 89, pl. xiii, figg. 10 & 11, *goldfussi*, p. 89, pl. xiii, figg. 12 & 13, *cordai*, p. 90, pl. xiii, fig. 21, *leitzersdorferensis*, p. 90, pl. xiii, figg. 22 & 23, *inversa*, p. 90, pl. x, figg. 3 & 4, *strigillata*, p. 91, pl. x, figg. 17 & 18, *ornata*, p. 91, pl. x, figg. 15 & 16, EGGER, Abh. Bayer. Ak. xxi.
- †*F. zitteliana*, p. 91, pl. xiii, figg. 26–29, EGGER, t. c., n. sp.
- †*Gaudryina crassa*, p. 36, pl. iv, figg. 25 & 26, *rugosa*, p. 37, pl. iv, figg. 14 & 16, *pupoides*, p. 37, pl. iv, figg. 19 & 20, *gradata*, p. 38, pl. iv, figg. 4–6, *oxycona*, p. 38, pl. iv, figg. 1–3, *filiformis*, p. 38, pl. iv, figg. 23 & 24, *spissa*, p. 39, pl. xiv, figg. 50–52, EGGER, t. c. *G. pupoides*, p. 8, *siphonella*, p. 9, pl. i, fig. 9, *filiformis*, p. 9, *rugosa*, p. 10, occurrence in Malay Archipelago, MILLETT, J. R. Micr. Soc. 1900.
- †*G. minima*, p. 37, pl. xxiv, fig. 26, EGGER, Abh. Bayer. Ak. xxi; *G. hirta*, Malay Archipelago, p. 10, pl. i, fig. 10, *wrightiana*, Malay Archipelago, p. 10, pl. i, figg. 11 & 12, MILLETT, J. R. Micr. Soc. 1900; *G. rudis*, Dog's Bay, Connemara, p. 53, pl. ii, figg. 1a & b, WRIGHT, Irish Natural. ix : n. spp.
- †*Glandulina laevigata*, p. 81, pl. v, fig. 31, *ovula*, p. 81, pl. v, fig. 33, *manifesta*, p. 82, pl. v, figg. 27 & 28, *subconica*, p. 82, pl. v, fig. 30, *discreta*, p. 82, pl. v, fig. 26, *humilis*, p. 83, pl. xxii, figg. 3 & 4, *parallela*, p. 83, pl. v, fig. 25, *elongata*, p. 83, pl. v, fig. 24, *mutabilis*, p. 83, pl. v, figg. 21–29, *aqualis*, p. 84, pl. v, fig. 22, *ovalis*, p. 84, pl. v, fig. 23, *cylindracea*, p. 84, pl. v, figg. 19 & 20, EGGER, Abh. Bayer. Ak. xxi.
- †*Globigerina cretacea*, p. 169, pl. xxi, figg. 1–3 & 10, *aequilateralis*, p. 169, pl. xxi, figg. 9, 11, 21–23, *bulloides*, p. 170, pl. xxi, figg. 5–7, *aspera*, p. 170, pl. xxi, figg. 18–20, *triloba*, p. 171, pl. xxi, fig. 8, *digitata*, p. 171, pl. xxi, fig. 4, *marginata*, p. 171, pl. xxi, figg. 12–14, *canaliculata*, p. 172, pl. xxi, figg. 15–17, 24–26, EGGER, t. c.
- †*Gümbelina*, n. g. defined, p. 31, for *globulosa*, p. 32, pl. xiv, fig. 43, *striata*, p. 33, pl. xiv, figg. 5–7, 10, 11, 37–39, *sulcata*, p. 33, pl. xiv, fig. 30, *globifera*, p. 33, pl. xiv, figg. 35, 36, 53–55, *decurrens*, p. 33, pl. xiv, figg. 1–4, *polystropha*, p. 34, pl. xiv, figg. 31–34 & 40, *crassa*, p. 34, pl. xiv, figg. 41, 42, 56, 57, *fruticosa*, p. 35, pl. xiv, figg. 8, 9, 24–26, *lata*, p. 35, pl. xiv, figg. 12, 13, 19, *acervulinoides*, p. 36, pl. xiv, figg. 14–18, 20–22, EGGER, t. c.
- Gypsinia vesicularis*, p. 198, pl. xix, fig. 12, var. *discus*, p. 199, pl. xix,

- fig. 13, var. *monticulus*, p. 200, pl. xix, figg. 14a & b, var. *squamiformis* nov., p. 200, pl. xix, figg. 15a & b, CHAPMAN, J. Linn. Soc. xxviii.
- Haddonia torresiensis*, notes on Funafuti specimens, p. 6, CHAPMAN, t. c.
- †*Haplophragmium agglutinans*, p. 28, pl. v, fig. 1, *neocomianum*, p. 29, pl. v, fig. 2, notes, CHAPMAN, t. c. †*H. terquemii*, p. 138, pl. i, figg. 18, 35, 54, 56, *agglutinans*, p. 138, pl. i, figg. 38-41, 47 & 48, *emaciatum*, p. 139, pl. i, figg. 12, 13, 33, 34, 49, 55, pl. ii, figg. 22-24, *foliaceum*, p. 139, pl. xxiv, figg. 28 & 29, *fontinense*, p. 140, pl. i, figg. 14-16, 19 & 20, 25-29, ii, figg. 40-42, *canariense*, p. 140, pl. xxii, figg. 9 & 10, *latidorsatum*, p. 141, pl. iii, figg. 24-26, *nonioninoides*, p. 141, pl. xxiii, figg. 10 & 11, *aequale*, p. 142, pls. iii, figg. 1 & 2, xvi, fig. 24, *scruposum*, p. 142, pl. iii, fig. 3, *rimosum*, p. 142, pl. xv, figg. 22 & 23, *lagenale*, p. 143, pl. iii, fig. 17, *inflatum*, p. 143, pl. iii, figg. 8, 9, 18, *ovatum*, p. 144, pl. iii, figg. 10 & 11, *grande*, p. 144, pl. iii, figg. 14-16, *irregulare*, p. 144, pl. iii, figg. 4-7 & 23, EGGER, Abh. Bayer. Ak. xxi.
- †*H. siler*, p. 137, pl. i, figg. 17, 36 & 37, *trifolium*, p. 137, pl. i, figg. 10, 11, 32, 52, 53, *petiolus*, p. 143, pl. ii, figg. 37-39, *spinulosum*, p. 139, pl. xxii, figg. 13-15, EGGER, t. c., n. spp.
- †*Haplostiche soldanii*, p. 18, pls. iii, figg. 12 & 13, xxii, figg. 29 & 30, *dentalinoides*, p. 19, pl. xv, fig. 41, *faedissima*, p. 19, pl. xxii, fig. 39, EGGER, t. c. †*H. constricta*, Upper Cretaceous, Galicia, p. 653, pl. xxvi, figg. 2-2b, aff. *dentalinoides*, Upper Cretaceous, Galicia, p. 653, pl. xxvi, figg. 4a & 4b, SCHUBERT, Jahrb. geol. Reichsanst. l.
- †*Heterostegina depressa*, pl. xx, fig. 1, p. 229, JONES & CHAPMAN in ANDREWS' "Christmas Island." *H. depressa*, Funafuti, notes and descr., p. 18, pl. iii, figg. 6 & 7, CHAPMAN, J. Linn. Soc. xxviii.
- †*Heterostomella rugosa*, p. 133, pl. xv, fig. 13, *abbreviata*, p. 133, pl. xxiv, fig. 15, EGGER, Abh. Bayer. Ak. xxi.
- †*Involutina remesiana*, p. 29, pl. v, figg. 5a-c, *conica*, p. 30, pl. v, figg. 6a & b, notes, CHAPMAN, J. Linn. Soc. xxviii.
- †*Karrereria cretaceu*, Upper Cretaceous, Galicia, p. 656, pl. xxvi, figg. 1-1b, SCHUBERT, Jahrb. geol. Reichsanst. l, n. sp.
- Lagena squamosa*, var. *montagui*, notes, p. 54, pl. ii, figg. 2a & b, WRIGHT, Irish Natural. ix.
- †*L. lævis*, pl. xv, fig. 2, *apiculata*, pl. xv, fig. 3, *orum*, pl. xv, fig. 4, p. 258, Upper Cambrian, Malverns, CHAPMAN, Quart. J. Geol. Soc. lvi. †*L. globosa*, p. 102, pl. v, fig. 3, *lævis*, p. 102, pl. v, fig. 2, *ellipsoidalis*, p. 102, pl. v, fig. 1, *apiculata*, p. 103, pl. v, fig. 32, var. *elliptica*, p. 103, pls. v, fig. 4, xxiv, 27, *clavata*, p. 103, pl. v, fig. 16, *marginata*, p. 104, pl. v, fig. 5, *alata*, p. 104, pl. v, figg. 6 & 7, *orbignyana*, p. 104, pl. v, figg. 8 & 9, *tricostulata*, p. 105, pl. v, fig. 15, *gracilis*, p. 105, pl. v, fig. 14, *sulcata*, p. 105, pl. v, fig. 13, *acuticosta*, p. 106, pl. v, fig. 12, *aspera*, p. 106, pl. v, fig. 10, *hystrix*, p. 106, pl. v, fig. 11, *spinosissima*, p. 107, pl. v, fig. 17 & 18, EGGER, Abh. Bayer. Ak. xxi.
- †*Lepidocyclus marginata*, synonymy, DERVIEUX, Boll. Mus. Torino xv, No. 380.
- †*Lingulina nodosaria*, p. 30, pl. v, figg. 8a & b, *ovalis*, p. 31, pl. v, figg. 9a & b, CHAPMAN, J. Linn. Soc. xxviii. †*L. bohemia*, p. 85, pl. xv, figg. 17 & 18, *furcillata*, p. 85, pl. xxiii, figg. 28-30, *semiornata*, p. 85, pl. xxv, figg. 20 & 21, *nodosaria*, p. 85, pl. xvi, figg. 34 & 35, *stillata*, p. 86, pl. xxv, figg. 25 & 26, EGGER, Abh. Bayer. Ak. xxi.
- †*Lituola cenomana*, p. 136, pl. iii, figg. 21 & 22, *globigerinoides*, p. 136, pl. xxiii, figg. 17 & 18, *nautiloidea*, p. 137, pl. iii, figg. 19 & 20, EGGER, t. c.
- †*Margulinula soluta*, Upper Cambrian, Malverns, p. 259, pl. xv, figg. 7 & 8; CHAPMAN, Quart. J. Geol. Soc. lvi. †*M. regularis*, p. 93, pl. ix, fig. 1, *apiculata*, p. 93, pl. ix, fig. 21, *parkeri*, p. 93, pl. ix, fig. 6, *compressa*, p. 93, pl. ix, fig. 8, *linearis* p. 94, pl. ix, fig. 3, *tumida*, p. 94, pl. ix,

- figg. 5 & 11, *inequalis*, p. 94, pl. ix, fig. 4, *bacillum*, p. 94, pl. ix, fig. 18, *carinata*, p. 95, pl. x, figg. 24-27, *elongata*, p. 95, pls. ix, fig. 22, xii, figg. 14 & 15, *comma*, p. 96, pl. ix, fig. 2, *bullata*, p. 96, pl. ix, figg. 9, 10, 12, 13, *munieri*, p. 96, pl. ix, fig. 17, *striatocostata*, p. 96, pl. ix, fig. 26, *tenuissima*, p. 97, pl. x, fig. 23, *hirsuta*, p. 97, pl. ix, fig. 15, *fragaria*, p. 97, pl. ix, figg. 14 & 16, EGGER, Abh. Bayer. Ak. xxi.
- † *Miliolina contorta*, p. 20, pl. xv, figg. 14-16, *vitrea*, p. 20, pl. xvii, figg. 27-29, *kochi*, p. 21, pl. xvi, figg. 41 & 42, EGGER, t. c. *M. boschiana*, note on Funafuti specimens, p. 177, pl. xix, fig. 7, CHAPMAN, J. Linn. Soc. xxviii.
- M. funafutiensis*, Funafuti, the Lagoon, p. 178, pl. xix, fig. 6, CHAPMAN, t. c., n. sp.
- Mimosina*, n. g. defined, p. 547, *affinis*, p. 548, pl. iv, fig. 11, *spinulosa*, p. 548, pl. iv, fig. 12, *spinulosa*, var., p. 548, pl. iv, fig. 13, *hystrix*, p. 549, pl. iv, fig. 14, all from Malay Archipelago, MILLETT, J. R. Micr. Soc. 1900, n. spp.
- † *Miogyppina irregularis*, p. 328, pls. ii, figg. 1-7, 9 & 10, iii, fig. 17, *globulina*, p. 329, pl. ii, fig. 8, *burdigalensis*, p. 330, pls. ii, figg. 11 & 12, iii, figg. 22-25, SCHLUMBERGER, Bull. Soc. geol. France xxviii.
- M. complanata*, St. Etienne d'Orthes, p. 330, pls. ii, figg. 13-16, iii, figg. 18-21, SCHLUMBERGER, t. c., n. sp.
- Monalysidium*, subgen. nov. of *Peneroplis*, for *sollani*, p. 3, pl. i, fig. 6, *polita*, p. 4, pl. i, fig. 5, Funafuti, CHAPMAN, J. Linn. Soc. xxviii, n. spp.
- † *Nodosaria*, sp., pl. xv, fig. 5, *abnormis*, pl. xv, fig. 6, p. 259, Upper Cambrian, Malvernia, CHAPMAN, Quart. J. Geol. Soc. lvi. † *N. radícula*, var. *grandis*, nov., p. 249, pl. xx, fig. 8, JONES & CHAPMAN in ANDREWS' "Christmas Island." † *N. simplex*, p. 54, pl. v, fig. 35, *expansa*, p. 54, pl. v, figg. 34 & 43, *legumen*, p. 54, pls. v, figg. 36-39, vi, 1-3, *elegans*, p. 55, pl. vii, fig. 12, *farcimen*, p. 55, pl. vi, fig. 12, *lorneiana*, p. 56, pl. vi, figg. 21 & 22, *concinna*, p. 56, pl. vii, figg. 1 & 2, *lepidula*, p. 56, pl. vi, fig. 18, *lilli*, p. 57, pl. vii, fig. 4, xxiv, fig. 18, *inornata*, p. 57, pl. vi, fig. 5, *reussii*, p. 57, pl. vi, fig. 34, *römeri*, p. 58, pl. vi, fig. 17, *pseudochrysalis*, p. 58, pl. vi, fig. 15, *subnodosa*, p. 58, pl. vi, figg. 11 & 27, *nodosa*, p. 59, pl. vi, fig. 35, *soluta*, p. 59, pls. vi, fig. 23, vii, fig. 3, *cognata*, p. 59, pl. vii, fig. 5, *oligostegia*, p. 60, pls. v, figg. 41 & 42, vi, 9 & 10, *pauperata*, p. 60, pl. vi, fig. 20, *siliqua*, p. 60, pl. xxiii, fig. 27, *catenula*, p. 61, pl. vi, fig. 24, *consobrina*, p. 61, pls. v, figg. 44, vi, figg. 31-33 & 36, *approximata*, p. 62, pl. vii, figg. 6 & 7, *limbata*, p. 62, pl. xxiv, fig. 41, *annulata*, p. 63, pl. vii, figg. 9-11, *monile*, p. 63, pl. vii, fig. 32, *acus*, p. 63, pl. vi, fig. 16, *nana*, p. 64, pl. vii, figg. 18 & 21, *subrecta*, p. 64, pl. vi, fig. 13, *nuda*, p. 64, pl. vii, fig. 17, *plebeja*, p. 65, pl. vi, fig. 25, *colligata*, p. 65, pl. vi, fig. 14, *communis*, p. 65, pl. vi, fig. 4, *mucronata*, p. 66, pl. vi, figg. 6-8, *hamulifera*, p. 66, pl. vi, fig. 26, *verneuilii*, p. 66, pl. vii, fig. 13, *tenuicollis*, p. 67, pl. vii, fig. 31, *filiformis*, p. 67, pl. vi, figg. 28-30, *radícula*, p. 67, pl. v, fig. 40, *jonesi*, p. 68, pl. vi, fig. 19, *guttifera*, p. 68, pl. vii, fig. 20, *adolphina*, p. 68, pl. vii, figg. 14, 15, 28, 29 & 30, *vulgaris*, p. 69, pl. vii, fig. 16, *discrepanis*, p. 69, pl. vii, fig. 19, *proteus*, p. 70, pl. vii, figg. 22-25, *steenstrupi*, p. 70, pl. vii, fig. 27, *longicauda*, p. 70, pl. xxiv, fig. 12, *multilineata*, p. 71, pl. xxiv, fig. 7, *bambusa*, p. 71, pl. viii, fig. 23, *lineolata*, p. 71, pl. viii, fig. 20, *marcki*, p. 71, pl. xxiv, fig. 32, *confluens*, p. 72, pl. ix, figg. 27 & 28, *paupercula*, p. 72, pl. viii, fig. 7, *fontannesi*, p. 72, pl. viii, fig. 25, *fascicostata*, p. 73, pl. xxiv, fig. 47, *elegantissima*, p. 73, pl. viii, fig. 4, *multistriata*, p. 73, pl. viii, fig. 18, *rariistriata*, p. 74, pl. viii, fig. 6, *polyphragma*, p. 74, pls. viii, fig. 26, xxiv, 37, *costellata*, p. 74, pl. viii, figg. 13 & 19, *obscura*, p. 75, pl. xxiv, fig. 23, *paucicosta*, p. 75, pl. xxiv, fig. 22,

- sulcata*, p. 75, pl. viii, fig. 24, *intercostata*, p. 76, pl. viii, fig. 22, *venusta*, p. 76, pl. xxii, fig. 23, *amphioxys*, p. 76, pl. viii, fig. 9, *prismatica*, p. 77, pl. viii, figg. 5, 8a & b, *tubifera*, p. 77, pl. viii, fig. 10, *scepttrum*, p. 77, pl. vii, fig. 26, *orthopleura*, p. 78, pl. xxiv, fig. 19, *zippei*, p. 78, pl. viii, figg. 1-3, *latepugata*, p. 79, pl. xxiv, fig. 25, *aculeata*, p. 79, pl. viii, fig. 12, *hispida*, p. 79, pls. viii, figg. 11, 14, ix, 23, 24, *spiniocosta*, p. 80, pl. viii, figg. 16, 17, 21, *aspera*, p. 80, pl. x, fig. 22, *retrorsa*, p. 81, pl. ix, fig. 25, EGGER, Abh. Bayer. Ak. xxi.
- †*N. orthophragma*, p. 62, pl. vii, fig. 8, *longispina*, p. 80, pl. x, fig. 22, EGGER, t. c., n. spp.
- †*Nonionina soldanii*, p. 174, pl. xxii, figg. 7 & 8, *boueana*, p. 174, pl. xxii, figg. 11 & 12, *scapha*, p. 175, pl. xxv, fig. 56, EGGER, t. c.
- †*Nubecularia tibia*, p. 20, pl. ii, fig. 34, ?, pl. xxii, figg. 31 & 32, EGGER, t. c.
- N. divaricata*, Funafuti, p. 168, figured, pl. xix, fig. 1, *bradyi*, ibid. p. 169, figured, pl. xix, fig. 3, CHAPMAN, J. Linn. Soc. xxviii.
- N. lacunensis*, Lagoon of Funafuti, p. 169, pl. xix, fig. 2, CHAPMAN, t. c., n. sp.
- †*Orbitoides dispansa*, p. 229, pl. xx, fig. 1, *sumatrensis*, p. 244, pl. xx, fig. 6, JONES & CHAPMAN, in ANDREWS' "Christmas Island."
- †*O. neodispansa*, Christmas Is., p. 235, pl. xx, figg. 3 & 4, *ephippioides*, p. 251, pl. xx, fig. 9, *insulae-natalis*, var. *inaequalis* nov., p. 254, pl. xxi, fig. 12, *andrewsiana*, p. 255, pl. xxi, fig. 14, *murrayana*, p. 252, pl. xxi, fig. 10, JONES & CHAPMAN, in ANDREWS' "Christmas Island," n. spp.
- †*Orbitolina concava*, p. 145, pls. xxii, fig. 34, xxiv, figg. 38-40, xxvi, figg. 1-18, EGGER, Abh. Bayer. Ak. xxi.
- Orbitolites marginalis*, notes on specimens from Funafuti, p. 180, pl. xx, figg. 1-3, CHAPMAN, J. Linn. Soc. xxviii.
- †*Orbulina universa*, p. 173, pl. xxi, figg. 46 & 47, EGGER, Abh. Bayer. Ak. xxi.
- †*Operculina cretacea*, p. 175, pl. xix, figg. 31 & 32, *complanata*, var. *granulosa*, p. 175, pl. xix, figg. 33 & 34, EGGER, Abh. Bayer. Ak. xxi.
- Peneroplis politus*, Funafuti, p. 180, pl. xix, fig. 19, CHAPMAN, J. Linn. Soc. xxviii.
- †*P. pertusus*, var. *cristata*, observations, p. 72, SILVESTRI, Atti Acc. Pont. Lincei lii.
- †*P. rovasendae*, Candia, p. 89, DERVIEUX, op. cit. liii, n. sp.
- †*Placopsilina bibullata*, p. 135, pl. ii, fig. 33, EGGER, Abh. Bayer. Ak. xxi, n. sp.
- †*P. cenomana*, p. 136, pl. ii, fig. 1, EGGER, t. c.
- †*Planispirina agglutinans*, p. 21, pls. xxii, figg. 5, 6, 16, 17, 18, xxiv, fig. 43, EGGER, t. c.
- Planorbulina acervalis*, var. *fimbriata* nov., Funafuti Lagoon, p. 193, pl. xx, fig. 4, CHAPMAN, J. Linn. Soc. xxviii.
- †*Plecanium ruthenicum*, p. 22, pl. xxv, figg. 35 & 36, *foedum*, p. 22, pl. i, figg. 42-44, *roscidum*, p. 23, pl. i, figg. 45 & 46, EGGER, Abh. Bayer. Ak. xxi.
- †*Plectina irregularis*, p. 23, pl. xv, figg. 32-34, *clava*, p. 23, pl. xv, figg. 37, 39, 47, EGGER, t. c.
- †*Pleurostomella fusiformis*, p. 47, pl. xvi, figg. 32 & 33, *alternans*, p. 48, pl. xvi, figg. 30 & 31, *subnodosa*, p. 48, pl. xvi, figg. 27 & 28, *obtusae*, p. 48, pl. xvi, fig. 29, EGGER, t. c.
- P. contorta*, Malay Archipelago, p. 280, pl. ii, figg. 11 & 12, MILLETT, J. R. Micr. Soc. 1900, n. sp.
- †*Polymorphina priscu*, p. 124, pl. xvii, fig. 1, *elliptica*, p. 124, pl. xvii, figg. 30 & 31, *lanceolata*, p. 125, pl. xvii, fig. 2, *porrecta*, p. 125, pl. xvii, figg. 21 & 22, *lacrima*, p. 125, pl. xvii, figg. 39 & 40, *obtusae*, p. 126, pl. xvii, fig. 25, *angusta*, p. 126, pl. xvii, figg. 8 & 9, *ampla*,

- p. 126, pl. xvii, fig. 32, *sororia*, p. 126, pl. xvii, figg. 6 & 7, var. *cuspidata*, p. 127, pl. xvii, figg. 10 & 11, *lactea*, p. 127, pl. xvii, figg. 14 & 15, *cretacea*, p. 127, pl. xvii, figg. 12 & 13, *gibba*, p. 128, pl. xvii, figg. 19 & 20, *communis*, p. 128, pl. xvii, figg. 36 & 37, *problemata*, p. 129, pl. xvii, figg. 33-35, *globosa*, p. 129, pl. xvii, fig. 26, *trigonula*, p. 129, pl. xvii, figg. 41-43, *horrida*, p. 130, pl. xvii, fig. 16, *acuminata*, p. 130, pl. xvii, fig. 3, *subrhombica*, p. 130, pl. xvii, figg. 4 & 5, *dilatata*, p. 131, pl. xxv, figg. 31 & 32, *proteus*, p. 131, pl. xxv, figg. 16-19, *tuberculata*, p. 131, pl. xvii, fig. 17, EGGER, Abh. Bayer. Ak. xxi.
- †*P. secans*, p. 131, pl. xvi, figg. 39 & 40, EGGER, t. c., n. sp.
- †*Polyphragma variabile*, p. 19, pl. xxiii, figg. 1-3, EGGER, t. c.
- Polytrema miniaceum*, p. 16, pl. iv, fig. 7, var. *involuta* nov., p. 17, pl. ii, fig. 3 and fig. in text, *planum*, Funafuti, p. 201, pl. xx, figg. 6 & 7, CHAPMAN, J. Linn. Soc. xxviii.
- †*Proroporus surgens*, p. 29, pl. ii, figg. 12 & 13, EGGER, Abh. Bayer. Ak. xxi, n. sp.
- †*Pullenia sphaeroides*, p. 174, pl. xxi, figg. 27 & 28, EGGER, t. c.
- †*Pulvinulina repanda*, notes and fig., p. 228, pl. xx, fig. 1, JONES & CHAPMAN, in ANDREWS' "Christmas Island." †*P. hauerii*, p. 154, pl. xviii, figg. 4-6, *partschiana*, p. 154, pl. xx, figg. 10-12, EGGER, Abh. Bayer. Ak. xxi.
- †*Ramulina globulifera*, p. 135, pl. ii, fig. 2, pl. xxii, fig. 33, *aculeata*, p. 135, pl. ii, fig. 3, EGGER, t. c.
- †*Rhabdogonium excavatum*, p. 92, pl. xvii, figg. 23 & 24, *römeri*, p. 92, pl. xxiii, figg. 39-40, *articulatum*, p. 92, pl. xxiii, figg. 36 & 37, EGGER, t. c.
- †*Rhizamina indivisa*, p. 15, pl. ii, figg. 17-19, sp.?, pl. i, fig. 21, EGGER, t. c.
- †*Rotalia clathrata*, p. 232, pl. xx, fig. 2, JONES & CHAPMAN, in ANDREWS' "Christmas Island."
- †*Rotulina bembix*, p. 155, pl. xx, figg. 29-31, *melchioriana*, p. 155, pl. xx, figg. 1-3, *nitida*, p. 156, pl. xx, figg. 4-6, *umbilicata*, p. 156, pl. xx, figg. 7-9, *soldanii*, p. 156, pl. xx, figg. 26-28, *caracolla*, p. 157, pl. xix, figg. 7-9, *reticulata*, p. 157, pl. xix, figg. 1-3, *micromphala*, p. 158, pl. xxv, figg. 1-3, *cordieriana*, p. 158, pl. xx, figg. 16-18, *stelligera*, p. 158, pl. xx, figg. 13-15, *voltziana*, p. 159, pl. xxii, figg. 26-28, *brueckneri*, p. 159, pl. xxii, figg. 19-21, *haidingeri*, p. 159, pl. xxv, figg. 36-38, *schloenbachi*, p. 160, pl. xix, figg. 25-27, *involuta*, p. 160, pl. xix, figg. 10-12, *karsteni*, p. 161, pl. xx, figg. 32-34, *polygraphes*, p. 161, pl. xx, figg. 35-37, *umbonella*, p. 161, pl. xviii, figg. 31-33, *kalenbergensis*, p. 162, pl. xix, figg. 16-18, *tuberculifera*, p. 162, pl. xix, figg. 19-21, *spinulifera*, p. 162, pl. xxi, figg. 42-44, EGGER, Abh. Bayer. Ak. xxi.
- †*Sagrina bifrons*, p. 134, pl. xv, figg. 25 & 26, *aspera*, p. 134, pl. xv, figg. 11, 12, 57, EGGER, t. c.
- Segenina* nom. nov. for *Sagenella* (Brady 1879) previously used for a g. of Polyzoa, *frondescens*, notes, p. 4, pls. i, figg. 1 & 2, ii, figg. 1 & 2, CHAPMAN, J. Linn. Soc. xxviii.
- †*Siderolina cenomana*, p. 174, pl. xxi, fig. 42, EGGER, Abh. Bayer. Ak. xxi.
- †*Siphogenerina columellaris*, p. 134, pl. xvi, figg. 20 & 21, EGGER, t. c.
- †*Sphaeroidina bulloides*, p. 173, pl. xxi, figg. 29 & 30, EGGER, t. c.
- †*Spirillina vivipara*, p. 18, pl. i, figg. 50 & 51, EGGER, t. c.; *S. spinigera*, notes on Funafuti specimens, p. 188, pl. xix, figg. 9 & 10, CHAPMAN, J. Linn. Soc. xxviii.
- S. spinigera*, Funafuti, p. 10, pl. i, figg. 7a-c, *tuberculato-limbata*, Funafuti, p. 11, pl. i, figg. 8a-c, CHAPMAN, t. c.; †*S. groomii*, Upper Cambrian, Malvern, p. 259, pl. xv, figg. 1, 10 & 11, CHAPMAN, Quart. J. Geol. Soc. lvi : n. spp.

- Spirolecta annectens*, pl. i, fig. 7, *biformis*, pl. i, fig. 8, synonymy and occurrence in Malay Archipelago, p. 8, MILLETT, J. R. Micr. Soc. 1900.
- †*S. annectens*, p. 29, pl. xiv, figg. 48 & 49, *biformis*, p. 30, pl. xxii, figg. 37 & 38, *americana*, p. 30, pl. xiv, fig. 23, *rosula*, p. 31, pl. xiv, figg. 46 & 47, EGGER, Abh. Bayer. Ak. xxi.
- †*S. gracilis*, p. 30, pl. xxiii, figg. 31 & 32, *robusta*, p. 31, pl. xvi, figg. 43–46, EGGER, t. c., n. spp.
- †*Spiroloculina cretacea*, p. 21, pl. i, figg. 22–24, EGGER, t. c. *S. nitida* var. *foveolata*, Funafuti, p. 171, pl. xix, fig. 4, CHAPMAN, J. Linn. Soc. xxviii.
- S. tortuosa*, Lagoon of Funafuti, p. 171, pl. xix, fig. 5, CHAPMAN, t. c., n. sp.
- †*Textularia baudouiniana*, p. 24, pl. ii, figg. 10 & 11, *dentata*, p. 24, pl. xv, fig. 40, *articulata*, p. 24, pl. xxii, figg. 40–42, *gramen*, p. 25, pl. ii, figg. 27 & 28, *praelonga*, p. 25, pl. ii, figg. 31 & 32, *anceps*, p. 25, pl. xxiv, figg. 35 & 36, *sagittula*, p. 26, pl. xiv, figg. 44 & 45, *pygmæa*, p. 26, pl. xiv, figg. 58 & 59, *pupa*, p. 26, pl. ii, figg. 29 & 30, *partechi*, p. 27, pl. ii, figg. 6 & 7, *concinna*, p. 27, pl. ii, figg. 25 & 26, *concaea*, p. 27, pl. ii, figg. 43 & 44, *conulus*, p. 28, pl. ii, figg. 8 & 9, *funigasi*, p. 28, pl. ii, figg. 35 & 36, *trochus*, p. 28, pl. xiv, figg. 27 & 28, *turris*, p. 29, pl. xiv, fig. 29, EGGER, Abh. Bayer. Ak. xxi.
- †*T. bonarelli*, Candia, p. 87, DERVIEUX, Atti Acc. Pont. Lincei liii, n. sp.
- †*Thurammina splendens*, Cretaceous, Upper Bavarian Alps, p. 15, pl. ii, figg. 14–16, p. 176, pl. xxv, figg. 51–53, EGGER, Abh. Bayer. Ak. xxi, n. sp.
- †*Triplasia murchisoni*, p. 42, pl. xv, fig. 24, EGGER, t. c.
- Triaxia lepida*, form from Malay Archipelago figured, p. 12, pl. i, fig. 15, MILLETT, J. R. Micr. Soc. 1900.
- †*T. tricarinata*, p. 40, pl. xiv, figg. 62 & 63, *pyramidata*, p. 41, pl. iv, figg. 27 & 28, *dubia*, p. 41, pl. iv, figg. 7 & 8, *minuta*, p. 42, pl. iv, figg. 9 & 10, *foveolata*, p. 42, pl. iv, figg. 32 & 34, EGGER, Abh. Bayer. Ak. xxi.
- †*T. compressa*, p. 41, pl. iv, figg. 29–31, EGGER, t. c., n. sp.
- †*Truncatulina convexa*, p. 149, pl. xviii, figg. 25–27, *ungeriana*, p. 150, pl. xix, figg. 4–6, *lobatula*, p. 151, pl. xxiii, figg. 12–14, *refulgens*, p. 151, pl. xx, figg. 19–21, EGGER, t. c.
- †*T. favosoides*, p. 150, pl. xx, figg. 22–25, EGGER, t. c., n. sp.
- †*Ueigerina cristata*, p. 132, pl. xv, fig. 55, *gracilis*, p. 132, pl. xv, figg. 27, 30, 31, var. *spinicauda*, p. 132, pl. xv, figg. 28 & 29, *tortilis*, p. 133, pl. xv, figg. 52–54, EGGER, t. c.
- †*Vaginulina truncata*, p. 31, pl. v, fig. 10, CHAPMAN, J. Linn. Soc. xxviii.
- †*V. ensis*, p. 98, pl. ix, fig. 7, *legumen*, p. 98, pl. ix, figg. 29 & 30, *elegans*, p. 99, pl. ix, figg. 19 & 20, *truncata*, p. 99, pl. xxv, figg. 14 & 15, *arguta*, p. 99, pl. x, fig. 10, *denudata*, p. 100, pl. xvi, figg. 36–38, *biochet*, p. 100, pl. x, figg. 8a & b, *costata*, p. 100, pl. xxiv, figg. 13 & 14, *jonesi*, p. 101, pl. x, fig. 11, *discora*, p. 101, pl. xxiv, figg. 44 & 45, *strigillata*, p. 101, pl. x, figg. 7, 9, 12, EGGER, Abh. Bayer. Ak. xxi.
- Valvulina davidiana*, Funafuti, p. 9, pl. i, fig. 4, *†cuneiformis*, Red Limestone of Nesselssdorf, p. 30, pl. v, figg. 7a & b, CHAPMAN, J. Linn. Soc. xxviii, n. spp.
- †*V. gibbosa*, p. 43, pl. xxiii, figg. 15 & 16, *allomorphinoides*, p. 43, pl. ii, figg. 4 & 5, EGGER, Abh. Bayer. Ak. xxi.
- †*Verneuilina bronni*, p. 39, pl. iv, figg. 11–13, *tricarinata*, p. 39, pl. iv, figg. 16–18, *münsteri*, p. 40, pl. iv, figg. 21 & 22, EGGER, t. c. *V. pygmæa*, figure of hyaline form from Malay Archipelago, p. 11, pl. i, fig. 13, MILLETT, J. R. Micr. Soc. 1900.
- Virgulina squamosa*, figured, p. 281, pl. ii, fig. 14, MILLETT, t. c.

## RADIOLARIA.

- †*Acanthosphæra*, sp.  $\alpha$ , p. 697, pl. xxxvii, fig. 5, sp.  $\beta$ , p. 697, pl. xxxvii, fig. 6, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*A. capellinii*, p. 649, pl. ix, fig. 8, *paronai*, p. 649, pl. ix, fig. 9, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- Actinomma boreale*, Spitzbergen, p. 26, pl. i, fig. 5, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. sp.
- †*A. dubia*, p. 650, pl. ix, fig. 11, *pachyspina*, p. 650, pl. ix, fig. 12, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- †*Amphirachium tarameilii*, p. 654, pl. ix, fig. 24, NEVIANI, t. c., n. sp.
- †*Archicapsa vinassai*, p. 657, pl. x, fig. 3, NEVIANI, t. c., n. sp.
- †*Artostrobis testellatus*, p. 664, pl. x, fig. 29, NEVIANI, t. c.
- Aulacantha scolymantha*, reproduction, p. 203, BORGERT, Zool. Jahrb. Anat. xiv.
- Beroetta melo*, Spitzbergen, p. 27, pl. i, fig. 8, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. sp.
- Botryopyle setosa*, Spitzbergen, p. 27, pl. i, fig. 10, CLEVE, t. c., n. sp.
- †*Cenellipsis subtypica*, p. 150, pl. ix, fig. 13, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Cenosphaera subpachyderma*, p. 647, pl. ix, figg. 1 & 2, *gemmellaroi*, p. 647, pl. ix, fig. 3, NEVIANI, t. c., n. spp.
- †*C.*, sp., p. 696, pl. xxxvii, fig. 1, *gregaria*, p. 696, pl. xxxvii, fig. 2, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- Challengeron nathorstii*, Spitzbergen, p. 28, pl. i, fig. 9, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. sp.
- †*Coccodiscus*, sp., p. 698, pl. xxxvii, fig. 17, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Conosphaera emiliana*, p. 649, pl. ix, fig. 10, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Cyrtocalpia*, cf. *compacta*, p. 700, pl. xxxvii, fig. 16, sp., p. 700, pl. xxxvii, fig. 25, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Cyrtocapsa phyalina*, p. 666, pl. x, fig. 38, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Dicolocapsa portisi*, p. 658, pl. x, fig. 7, *forasini*, p. 659, pl. x, figg. 8 & 9, *abbreviata*, p. 659, pl. x, fig. 10, *globosa*, p. 659, pl. x, fig. 11, NEVIANI, t. c., n. spp.
- †*D.*, sp., p. 701, pl. xxxvii, fig. 28, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Dictyastrum paronai*, p. 654, pl. ix, fig. 25, *pantunellii*, p. 654, pl. ix, fig. 26, *capellinii*, p. 654, pl. ix, fig. 27, *pala*, p. 655, pl. ix, fig. 28, *truncutum*, p. 655, pl. ix, fig. 29, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- †*Dictyomitra multicostata*, p. 701, pl. xxxviii, fig. 3, sp.  $\alpha$ , pl. xxxviii, fig. 5, sp.  $\beta$ , pl. xxxviii, fig. 6, sp.  $\gamma$ , pl. xxxviii, fig. 7, sp.  $\delta$ , pl. xxxviii, fig. 8, all p. 702, sp.  $\epsilon$ , p. 703, pl. xxxviii, fig. 11, sp.  $\zeta$ , p. 703, pl. xxxviii, fig. 12, *regularis*, p. 703, pl. xxxviii, fig. 10, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*D. tiara*, p. 701, pl. xxxviii, fig. 4, *pagoda*, p. 702, pl. xxxviii, fig. 9, Upper Chalk, Coulsdon, Surrey, HOLMES, t. c.; †*D. hyalina*, p. 663, pl. x, fig. 23, *dombicci*, p. 663, pl. x, fig. 24, *exilis*, p. 663, pl. x, fig. 25, *montana*, p. 663, pl. x, fig. 26, *gigantea*, p. 663, pl. x, fig. 27, *vinassai*, p. 664, pl. x, fig. 28, NEVIANI, Bull. Soc. geol. Ital. xix : n. spp.
- †*Dorysphaera poronissima*, p. 648, pl. ix, fig. 4, NEVIANI, t. c.
- †*Ellipsostylus hindei*, p. 651, pl. ix, fig. 16, NEVIANI, t. c.
- †*Ellipsozaphus fornassini*, p. 651, pl. ix, fig. 14, NEVIANI, t. c., n. sp.

- Euphysetta nathorstii*, Spitzbergen, p. 29, pl. ii, fig. 3, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. sp.
- †*Eusyringium de angelisi*, p. 665, pl. x, fig. 34, NEVIANI, Bull. Soc. geol. Ital., n. sp.
- †*Hagiastrum*, sp., p. 699, pl. xxxvii, fig. 27, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Halicapsa elongata*, p. 658, pl. x, fig. 4, *abbreviata*, p. 658, pl. x, fig. 5, *parva*, p. 658, pl. x, fig. 6, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- Hexadoras borealis*, Spitzbergen, p. 30, pl. ii, fig. 4, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. sp.
- †*Lithapium*, sp., p. 697, pl. xxxvii, fig. 7, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Lithocampe*, sp., p. 701, pl. xxxvii, fig. 21, Upper Chalk, Coulsdon, Surrey, HOLMES, t. c.
- †*L. subcretacea*, p. 665, pl. x, fig. 33, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Lithomitra savignanensis*, p. 664, pl. x, fig. 30, var. *bombianæ*, nov., p. 665, pl. x, fig. 31, *airughii*, p. 665, pl. x, fig. 32, NEVIANI, t. c., n. spp.
- Peridium intricatum*, p. 31, pl. ii, fig. 8, *laxum*, p. 31, pl. ii, fig. 9, *minutum*, p. 31, pl. iii, fig. 1, CLEVE, Svenska Ak. Handl. xxii, Art. 13, n. spp.
- Plectanium simplex*, Spitzbergen, p. 32, pl. iii, fig. 3, CLEVE, t. c., n. sp.
- Polypetta holostoma*, Spitzbergen, p. 32, pl. iii, fig. 4, CLEVE, t. c., n. sp.
- †*Porodiscus perforatus*, p. 653, pl. ix, fig. 21, *bassanii*, p. 653, pl. ix, fig. 22, *ellipsoides*, p. 653, pl. ix, fig. 23, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- Pterocorys irregularis*, Spitzbergen, p. 32, pl. iv, fig. 1, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. sp.
- †*Rhopalastrum*, sp. a, p. 699, pl. xxxvii, fig. 26, sp. β, p. 699, pl. xxxvii, fig. 19, sp. γ, p. 699, pl. xxxvii, fig. 23, sp. δ, p. 699, pl. xxxvii, fig. 18, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*R. spinosum*, p. 655, pl. ix, fig. 30, *carcinoides*, p. 656, pl. ix, fig. 31, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- †*Sethocapsa prunoides*, p. 659, pl. x, fig. 12, var. *longicollis*, nov., p. 660, pl. x, fig. 13, *dorysphaeroides*, p. 660, pl. x, fig. 14, *macracanthina*, p. 660, pl. x, fig. 15, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- †*Sethoconus deforme*, p. 661, pl. x, fig. 16, NEVIANI, t. c.; *S. galea*, Spitzbergen, p. 33, pl. iv, fig. 3, CLEVE, Svenska Ak. Handl. xii, Art. 3 : n. spp.
- †*Sphaerozoum*, sp., p. 656, pl. ix, fig. 33, NEVIANI, Bull. Soc. geol. Ital. xix.
- †*Spongotropus pauper*, p. 697, pl. xxxvii, fig. 10, sp., p. 698, pl. xxxvii, fig. 11, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Stauralastrum*, sp., p. 700, pl. xxxviii, fig. 2, Upper Chalk, Coulsdon, Surrey, HOLMES, t. c.
- †*S. venustum*, Upper Chalk, Coulsdon, Surrey, p. 700, pl. xxxviii, fig. 1, HOLMES, t. c., n. sp.
- †*Staurodiscus*, n. g. for *riisti*, p. 652, pl. ix, fig. 18, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Stichocapsa subjugunda*, p. 665, pl. x, fig. 35, *nova*, p. 666, pl. x, fig. 36, *oides*, p. 666, pl. x, fig. 37, NEVIANI, t. c., n. spp.
- †*Stylocyclia emeryana*, p. 652, pl. ix, fig. 19, NEVIANI, t. c., n. sp.
- †*Stylosphaera*, sp., p. 696, pl. xxxvii, fig. 3, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Tricolocampe isseli*, p. 661, pl. x, fig. 17, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Tricolocapsa sphaeroides*, p. 662, pl. x, fig. 22, NEVIANI, t. c., n. sp.
- †*Trigonaectura armata*, Upper Chalk, Coulsdon, Surrey, p. 699, pl. xxxvii, fig. 22, HOLMES, Quart. J. Geol. Soc. lvi; †*T. tripos*, p. 653, pl. ix, fig. 20, NEVIANI, Bull. Soc. geol. Ital. xix : n. spp.



- †*Trigonocydia*, sp. a, p. 698, pl. xxxvii, fig. 20, sp. β, p. 698, pl. xxxvii, fig. 24, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Trigonodiscus*, n. g. for *grizzanensis*, p. 651, pl. ix, figg. 16 & 17, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Trilonche*, sp., p. 697, pl. xxxvii, fig. 4, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Tripilidium bononiense*, p. 657, pl. x, fig. 1, NEVIANI, Bull. Soc. geol. Ital. xix, n. sp.
- †*Tripodiscium irregulare*, p. 657, pl. x, fig. 2, NEVIANI, t. c., n. sp.
- Trochodiscus helioides*, Spitzbergen, p. 34, pl. iv, fig. 5, CLEVE, Svenska Ak. Handl. xxii, Art. 3.
- †*T.*, sp., p. 698, pl. xxxvii, fig. 12, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- Theocorys borealis*, Spitzbergen, p. 33, pl. iii, fig. 5, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. sp.
- †*Theodiscus*, sp., p. 697, pl. xxxvii, fig. 9, Upper Chalk, Coulsdon, Surrey, HOLMES, Quart. J. Geol. Soc. lvi.
- †*Theosyringium italicum*, p. 661, pl. x, fig. 18, *apenninicum*, p. 661, pl. x, fig. 19, *robustum*, p. 662, pl. x, figg. 20 & 21, NEVIANI, Bull. Soc. geol. Ital. xix, n. spp.
- †*X-Astrum*, n. g., *bombicci*, p. 656, pl. ix, fig. 32, NEVIANI, t. c., n. sp.
- †*Xyphostylus felsinæ*, p. 649, pl. ix, fig. 7, NEVIANI, t. c., n. sp.
- †*Xyphosphera manzonii*, p. 648, pl. ix, fig. 5, *tenuispina*, p. 649, pl. ix, fig. 6, NEVIANI, t. c., n. spp.
- †*Zygostephanus aculeatus*, Upper Chalk, Coulsdon, Surrey, p. 703, pl. xxxviii, fig. 13, HOLMES, Quart. J. Geol. Soc. lvi.
- †Genus undetermined: p. 698, pl. xxxvii, figg. 13-15, p. 700, pl. xxxvii, fig. 8, Upper Chalk, Coulsdon, Surrey, HOLMES, t. c.

## CORTICATA.

## SPOROZOA.

- Cytodiscus immersus*, descr., etc., p. 291, LÜHE, Verh. Deutsch. zool. Ges. ix.
- Eimeria novi*, life history, p. 659, BONNET-EYMARD, C.R. Soc. Biol. 1900.
- Gregarina gryllorum*, in *Gryllus*, p. 594, pl. xx, figg. 26-29, CUÉNOT, Arch. Biol. xviii, n. sp.
- G. complanata*, in *Glossiphonia elongata*, p. 60, CASTLE, Bull. Mus. Harvard xxxvi, No. 2.
- Hæmamæba danilevskyi*, notes etc., p. 19, LAVERAN, C.R. Soc. Biol. 1900.
- Hæmogregarina platydactyli*, in *Platydictylus*, p. 547, BILLET, t. c., n. sp.
- Henneguya tenuis*, in *Acerina cernua*, p. 105, VANEY & CONTE, Ann. Soc. Linn. Lyon xlvii, n. sp.
- Hexactinomyxon*, n. g. def. for *psammoryctis*, in *Psammoryctes barbatus*, p. 9, STOLC, Rosp. Ceske Ak. Praze viii, n. sp.
- Karyamæba*, n. g. for *renis*, in renal cells of *Mus decumanus*, p. 36, GIGLIO-TOS, Arch. ital. Biol. xxxiv, n. sp.
- Laverania præcox*, descr., p. 9, pl. i, fig. 3, life-history, pl. ii, NEVEU-LEMAIRE, Caus. Soc. Zool. France 1900.
- Lymphosporidium*, n. g. for *truttæ*, in Brook Trout, p. 513, CALKINS, Zool. Anz. xliii, n. sp.
- Monocystis*, synonymy of spp. found in Earthworms, p. 633, descr., p. 584, *magna*, p. 584, *porrecta*, 585, CUÉNOT, Arch. Biol. xvii.
- M. pilosa*, in *Lumbricus*, p. 585, CUÉNOT, t. c., n. sp.

- Piroplasma canis*, cause of disease in the Dog, p. 168, LEBLANC, C.R. Soc. Biol. 1900; notes and descr., MARCHOUX, C.R. Soc. Biol. 1900.
- Plasmodium malariae*, p. 8, pl. i, fig. 1, *vivax*, p. 9, pl. i, fig. 2, NEVEU-LEMAIRE, Caus. Soc. Zool. France 1900.
- Plistophora acerinae*, in *Acerina cernua*, p. 105, VANEY & CONTE, Ann. Soc. Linn. Lyon xlvii, n. sp.
- Pyxinia frenzeli*, in *Attagenus pelloi*, p. 554, LAVERAN & MESNIL, C.R. Soc. Biol. 1900, n. sp.
- Raphidospora*, n. g. for *le danteci*, in intestine of *Olocrates gibbus*, p. 261, LÉGER, C.R. Soc. Biol. 1900, n. sp.
- Schizocystis gregarinoides*, in intestine of larvæ of *Ceratopogon*, Lake Luitel, LÉGER, C.R. Ac. Sci. cxxxi, p. 722; LÉGER, C.R. Soc. Biol. 1900, p. 868, n. sp.
- Spharomyxa sabrazei*, in *Hippocampus*, p. 380, LAVERAN & MESNIL, C.R. Soc. Biol. 1900, n. sp.
- Synactinomyxon*, n. g. def. for *S. tubificis*, in *Tubifex rivulorum*, p. 8, STOLC, Rozp. Ceske Ak. Praze viii, n. sp.
- Triactinomyxon*, n. g. def. for *ignotum*, in *Tubifex rivulorum*, p. 9, STOLC, t. c., n. sp.

## FLAGELLATA.

- Chromulina nebulosa*, descr., p. 258, figg. 24-31, IWANOFF, Bull. Ac. St. Petersb. xi.
- Chrysopyxis bipes*, descr. p. 251, figg. 1-9, IWANOFF, t. c.
- Dinobryon divergens*, figg. 22 & 23, IWANOFF, t. c.
- D. spiralis*, Lake Bologoye, p. 261, figg. 32 & 33, IWANOFF, t. c., n. sp.
- Gonyostomum latum*, Bologoye, p. 447, pl. xii, figg. 15 & 16, IWANOFF, t. c., n. sp.
- Mallomonas acercoides*, p. 249, *producta*, p. 250, *caudata*, p. 250, IWANOFF, t. c.
- Trichomonas caviae*, p. 305, GALLI-VALERIO, Centrbl. Bakter. xxvii.
- Uroglana volvox*, descr., p. 254, figg. 10-21, IWANOFF, Bull. Ac. St. Petersb. xi.

## DINOFLAGELLATA.

- Amphisolenia bidentata*, Gulf of Naples, p. 20, pl. i, fig. 16, SCHRÖDER, Mt. Stat. Neapel xiv.
- Ceratium furca*, seasonal dimorphism, p. 545, MINKIEWICZ, Zool. Anz. xxiii.
- C. tripos* and vars., p. 15, fig. 17, SCHRÖDER, Mt. Stat. Neapel xiv.
- Dinophysis truncata*, 38° S. 30° W., p. 925, miles, 13°-27° N., 43°-34° E., p. 1030, CLEVE, Ofv. Ak. Forh. lvii, n. spp.

## RHYNCHOFLAGELLATA.

(Vacant).

## CILIATA.

- Amphorella antarctica*, S. Atlantic, p. 921, CLEVE, Ofv. Ak. Forh. lvii, n. sp.
- Cycloposthium bipalmatum*, structure etc., p. 648, GÜNTHER, Zeitschr. wiss. Zool. lxvii.
- Cyttarocylis striata*, 41° S., 6° W., p. 922, CLEVE, Ofv. Ak. Forh. lvii; *C. pseudannulata*, North Sea, p. 15, pl. ii, fig. 28, JØRGENSEN, Bergens Mus. Aarbog 1900; n. spp.

- Euplotes paletta*, division, p. 276, SCHUBERG, Verh. Ver. Heidelb. vi.  
*Lagenophrys*, synopsis of the g., WALLENGREN, Biol. Centrbl. xx.  
*Loxophyllum verrucosum*, Salt Lake in Lorraine, p. 343, pl. xv, figg. 1-5, FLORENTIN, Ann. Sci. nat. xii : n. sp.  
*Metopus sigmoides*, in hot springs in Italy, p. 60, pl. i, fig. 2, ISSEL, Atti Soc. Ligustica xii.  
*Ophryoscolex caudatus*, structure, p. 640, pl. xxxvi, GÜNTHER, Zeitschr. wiss. Zool. lxvii.  
*Spirochona gemmipara*, nuclear and cell-division, p. 37, DOFLEIN, Zool. Jahrb. Anat. xiv.  
*Strombidium elegans*, Salt Lakes of Laneuveville, p. 348, pl. xv, figg. 6-12, FLORENTIN, Ann. Sci. nat. xii, n. sp.  
*Tintinnus calyptra*, Spitzbergen, p. 24, pl. i, fig. 2, *pellucidus*, Spitzbergen, p. 24, pl. i, fig. 4, CLEVE, Svenska Ak. Handl. xxii, Art. 3, n. spp.  
*Trichodina*, sp. from the rectum of *Echiurus uncinatus* from Japan, p. 227, pl. xxii, fig. 20, EMBLETON, J. Linn. Soc. xxviii, n. sp.  
*Undella subacuta*, 49° N., 32° E., p. 923, CLEVE, Ofv. Ak. Forh. lvii, n. sp.

## ACINETARIA.

- Acineta bifaria*, p. 143, pl. xviii, fig. 5, *pyriformis*, p. 144, pl. xix, fig. 6, *contorta*, p. 145, pl. xvii, fig. 18, *solenophryaformis*, p. 145, pl. i, fig. 4, *elegans*, p. 146, pl. xxi, fig. 15, *livadiana*, p. 147, pls. i, fig. 6, iii, fig. 10, vi, figg. 1 & 3, *parva*, p. 149, pl. xv, fig. 12, *homart*, p. 150, *crenata*, p. 151, pls. v, fig. 11, ix, figg. 2, 3, 6, 7, 8, xxii, fig. 15, *multitentaculata*, p. 153, *divisa*, p. 154, pls. v, figg. 7 & 9, xiii, figg. 1 & 3, xiv, figg. 1 & 3, *patula*, p. 156, *jorisi*, p. 157, pl. xxii, figg. 4, 10, 14, *vorticelloides*, p. 158, pl. viii, fig. 1, *dibdalteria*, *jolyi*, p. 163, *complanata*, p. 164, pl. xx, fig. 7, *flava*, *emaciata*, p. 165, *pusilla*, p. 166, *urceolata*, p. 167, pl. xviii, fig. 2, *grandis*, p. 168, *ornata*, p. 169, pl. xv, figg. 3, 4 & 7, *crustaceorum*, p. 170, pl. xv, fig. 11, *speciosa*, p. 171, pl. xxi, fig. 1, *cuspidata*, p. 172, *compressa*, p. 172, pl. xxiii, fig. 8, *papillifera*, p. 173, pl. xxii, figg. 11-13, *lusanicola*, p. 174, *cattanei*, p. 174, pl. xix, fig. 1, *simplex*, p. 175, pl. xix, fig. 12, *nieusportensis*, p. 176, pl. xv, fig. 2, *tulipa*, p. 177, pl. xix, fig. 10, *linguifera*, p. 177, pl. xix, fig. 11, *lacustris*, p. 178, pl. xviii, fig. 6, *tuberosa*, p. 179, pls. vii, figg. 4, 5, 6, 11-14, xii, fig. 9, xiii, figg. 3, 4, 5, 7, xvii, fig. 14, *aequalis*, p. 183, pl. xix, fig. 5, *stellata*, p. 201, *lappacea*, p. 202, SAND, Ann. Soc. Belge Micr. xxv.  
*Acinetactis mirabilis*, p. 202, SAND, t. c.  
*Acinetopsis*, g. def., p. 87, *rara*, p. 88, SAND, t. c.  
*Amæbophrya*, g. def., p. 105, *sticholonche*, p. 106, pl. xx, figg. 1 & 2, *acanthometra*, p. 107, pl. xx, figg. 3 & 4, SAND, t. c.  
*Dendrocometes*, g. def., p. 58, *paradoxus*, p. 59, SAND, t. c.  
*Dendrosoma*, g. def., p. 70, *radians*, p. 71, SAND, t. c.  
*Ephelota*, g. def., p. 188, *coronata*, p. 189, pl. xviii, figg. 7, 10, 12, 14, *neglecta*, p. 190, pl. v, fig. 10, *lacazei*, p. 190, pl. xix, fig. 4, *bütschliana*, p. 191, pl. xxi, fig. 12, *crustaceorum*, p. 193, pl. iv, fig. 9, *truncata*, p. 194, *gemmipara*, p. 195, pls. iii, figg. 4 & 7, v, fig. 8, vi, fig. 7, SAND, t. c.  
*Endosphæra*, g. def., p. 104, *engelmanni*, p. 105, SAND, t. c.  
*Hallezia*, g. def., p. 111, *oviformis*, p. 111, pl. v, figg. 1-4, *buckei*, p. 112, pls. vii, fig. 1, xxi, figg. 2, 4 & 9, *brachypoda*, p. 114, pl. xx, fig. 5, SAND, t. c.  
*Hypocoma parasitica*, p. 84, pl. xviii, fig. 9, *soothamni*, p. 84, SAND, t. c.  
*Metacineta*, g. def., p. 109, SAND, t. c.  
*Microhydrella tentaculata*, p. 204, pl. xxiii, fig. 4, SAND, t. c.

- Ophryodendron*, g. def. and key to spp., p. 72, *variabile*, p. 74, pl. xviii, fig. 6, *trinacrium*, p. 74, pl. xxi, figg. 13 & 14, *multicapitatum*, p. 76, *belgicum*, p. 77, pls. xiii, figg. 8-11, xvi, figg. 1 & 2, *abientinum*, p. 79, *pedicellatum*, p. 80, *sertularia*, p. 81, *porcellanum*, p. 82, SAND, t. c.
- Peitvadia mirabilis*, p. 203, pl. xxiii, fig. 3, SAND, t. c.
- Podocyathus*, g. def., p. 198, *diadema*, p. 200, SAND, t. c.
- Podophrya*, g. def., p. 89, *brevipoda*, p. 91, pl. iv, fig. 2, *maupasii*, p. 91, *libera*, p. 93, *fixa*, p. 95, *gelatinosa*, p. 96, *gasterostei*, p. 98, SAND, t. c.
- Rhyncheta*, g. def., p. 85, *cyclopum*, p. 85, *gammari*, p. 86, pl. xxii, fig. 6, SAND, t. c.
- Solenophrya*, g. def., p. 184, *crassa*, *bütschli*, p. 185, *inclusa*, p. 186, pl. xviii, fig. 1, *pera*, p. 186, pl. xviii, fig. 3, *odontophora*, p. 202, SAND, t. c.
- Sphaerophrya*, g. def., p. 98, *stentorea*, p. 99, *pusilla*, p. 100, *hydrostatica*, *parva*, p. 102, *ovata*, p. 103, *massiliensis*, p. 103, pl. xxii, fig. 17, SAND, t. c.
- Staurophrya elegans*, p. 203, pl. xxiii, fig. 6, SAND, t. c.
- Stylocometes*, g. def., p. 59, *digitatus*, p. 61, pl. xxi, figg. 3 & 10, SAND, t. c.
- Tokophrya*, g. def., p. 114, key to spp., p. 115, *conipes*, p. 117, *lyngbyei*, p. 118, pls. iii, fig. 5, iv, figg. 4, v, fig. 5, *limbata*, p. 119, pl. viii, figg. 2-6, *macrostylo*, p. 120, pl. xx, fig. 8, *macrocaulis*, p. 121, pl. xviii, figg. 4 & 17, *francottei*, p. 122, pl. xxii, fig. 9, *troidi*, p. 122, *marina*, p. 123, pl. xxiii, fig. 2, *crassipes*, p. 124, pl. xx, fig. 3, *ciliata*, p. 124, pl. xxiii, fig. 1, *steinii*, p. 125, *lichtensteini*, p. 126, *ferrum-equinum*, p. 127, *cothurnata*, p. 128, pl. xxi, fig. 7, *inclinata*, p. 129, *parroceli*, p. 130, pl. xxii, fig. 16, *astaci*, p. 130, *cylindrica*, p. 131, pl. viii, figg. 7-9, *elongata*, p. 132, pl. xvi, fig. 12, *flexilis*, p. 134, *carchesii*, p. 134, pl. xxiv, figg. 1 & 3, *quadripartita*, p. 135, pl. vi, fig. 6, *cyclopum*, p. 136, pls. xviii, fig. 18, xxi, figg. 5 & 6, *infusionum*, p. 138, *pyrum*, p. 139, pl. xxiv, fig. 2, *diaptomi*, p. 139, SAND, t. c.
- Trichophrya*, g. def. and key to spp., p. 61, *pisium*, p. 64, pl. xxi, fig. 11, *epistylidis*, p. 65, *salparum*, *simplex*, p. 66, *ameboides*, p. 67, pl. x, figg. 1-4, *variabilis*, p. 68, pl. iv, figg. 7, 8 & 10, *odontophora*, p. 68, pl. x, figg. 5-7, *mirabilis*, p. 69, pl. xiv, fig. 5, *angulata*, p. 201, SAND, t. c.
- Urnula*, g. def., p. 86, *epistylidis*, p. 87, SAND, t. c.

# INDEX TO NAMES

OF

## NEW GENERA AND SUBGENERA

### MENTIONED IN VOLUME XXXVII,

INCLUDING NEW NAMES FOR GENERA PREVIOUSLY ESTABLISHED.\*

- 
- |  |  |
|--|--|
| <p>Abriesa, <i>Swinhoe</i>, Ins. 251<br/>           Abstrulia, <i>Casey</i>, Ins. 163<br/>           Acanthicolepis, <i>McIntosh</i>, Verm. 24<br/>           Acanthinites, <i>Mojsisovics</i>, Moll. 53<br/>           Acanthobracon, <i>Kriechbaumer</i>, Ins. 207<br/>           Acanthocaulus, <i>Waite</i>, Pisces 19<br/>           Acanthochasmus, <i>Looss</i>, Verm. 43<br/>           Acanthotermes, <i>Sjöstedt</i>, Ins. 340<br/>           Achenopsis, <i>Fauvel</i>, Ins. 125<br/>           Achlæodictya, <i>Hall and Clarke</i>, Spong. 31<br/>           Achroösia, <i>Hampson</i>, Ins. 235<br/>           Acicularia, <i>Monterosato</i>, Moll. 78<br/>           Acleistoceras, <i>Hyatt</i>, Moll. 56<br/>           Acontiola, <i>Staudinger</i>, Ins. 251<br/>           Acacona, <i>Karsch</i>, Ins. 276<br/>           Acragas, <i>Simon</i>, Arachn. 17<br/>           Acrocaula, <i>Hult</i>, Ins. 276<br/>           Acrophytum, <i>Hickson</i>, Cœl. 15<br/>           Acroreia, <i>Cossmann</i>, Moll. 82<br/>           Acrosterigma, <i>Dall</i>, Moll. 83<br/>           Acrozangis, <i>Breddin</i>, Ins. 313<br/>           Actæopsis, <i>Lanchester</i>, Crust. 21<br/>           Actinonaias, <i>Crosse and Fischer</i>, Moll. 85<br/>           Actonia, <i>Monterosato</i>, Moll. 76<br/>           Actuarium, <i>Distant</i>, Ins. 313<br/>           Acuticosta, <i>Simpson</i>, Moll. 85<br/>           Adda, <i>Fauvel</i>, Ins. 125<br/>           Adelyncyrtus, <i>Ashmead</i>, Ins. 212</p> | <p>Adelobothrium, <i>Shipley</i>, Verm. 40<br/>           Adopsooides, <i>Godman</i>, Ins. 229<br/>           Adoxosia, <i>Hampson</i>, Ins. 235<br/>           Adrastidia, <i>Simon</i>, Arachn. 18<br/>           Ænictionia, <i>Wasmann</i>, Ins. 125<br/>           Ænigmostomus, <i>Ashmead</i>, Ins. 207<br/>           Æolosia, <i>Hampson</i>, Ins. 235<br/>           Æretica, <i>Dall</i>, Moll. 83<br/>           Æthosia, <i>Hampson</i>, Ins. 235<br/>           Ætius, <i>Distant</i>, Ins. 314<br/>           Agapanthiola, <i>Ganglbauer</i>, Ins. 172<br/>           Agathobanchus, <i>Ashmead</i>, Ins. 202<br/>           Agelista, <i>Simon</i>, Arachn. 18<br/>           Aglithodictya, <i>Hall and Clarke</i>, Spong. 32<br/>           Aglossosia, <i>Hampson</i>, Ins. 235<br/>           Agonozoa, <i>McNeil</i>, Ins. 352<br/>           Agræcus, <i>Fairmaire</i>, Ins. 160<br/>           Aipoceras, <i>Hyatt</i>, Moll. 56<br/>           Aithria, <i>Cameron</i>, Ins. 202<br/>           Alaomorphus, <i>Hauser</i>, Ins. 151<br/>           Albia, <i>Thon</i>, Arachn. 33<br/>           Alcitha, <i>Kirkaldy</i>, Ins. 321<br/>           Aldrichia, <i>Vaughan</i>, Cœl. 20<br/>           Alitargus, <i>Cusey</i>, Ins. 137<br/>           Allochordeuma, <i>Rothenbühler</i>, Myriop. 6<br/>           Allocreadium, <i>Looss</i>, Verm. 43<br/>           Allæocarpa, <i>Michaelsen</i>, Tun. 6<br/>           Allotheronia, <i>Ashmead</i>, Ins. 202<br/>           Alotza, <i>Swinhoe</i>, Ins. 252</p> |
|--|--|

---

\* The total number of names in this Index is 2102, distributed as follows:—*Mammalia*, 22; *Aves*, 11; *Reptilia*, 15; *Pisces*, 41; *Tunicata*, 6; *Mollusca*, 466; *Brachiopoda*, 6; *Bryozoa*, 10; *Crustacea*, 39; *Arachnida*, 90; *Myriopoda*, 12; *Insecta*, 1147; *Echinodermata*, 41; *Vermes*, 108; *Coelenterata*, 40; *Spongia*, 39; *Protozoa*, 15. The total last year was 1683. The previous maximum for any year was 1707 in 1885.

- Alpheiceras, *Cossmann*, Moll. 56  
 Alutefa, *Swinhoe*, Ins. 276  
 Amarodytes, *Régimbart*, Ins. 123  
 Amastrella, *Sykes*, Moll. 67  
 Ambluroides, *Warren*, Ins. 264  
 Ametor, *Semenow*, Ins. 124  
 Amicoplidea, *Ashmead*, Ins. 207  
 Ammonius, *Thorell*, Arachn. 18  
 Amœbogramia, *Giard*, Prot. 15  
 Amphidraus, *Simon*, Arachn. 18  
 Amphinaias, *Crosse and Fischer*, Moll. 85  
 Amphipneustes, *Koehler*, Ech. 80  
 Amygdalonaias, *Crosse and Fischer*, Moll. 85  
 Anacheirotus, *Blackburn*, Ins. 141  
 Anaporrhutum, *Offenheim*, Verm. 43  
 Anarmoxys, *Raffray*, Ins. 129  
 Anarthronota, *Schmiedeknecht*, Ins. 202  
 Anasibirites, *Mojisovics*, Moll. 53  
 Anasirenites, *Mojisovics*, Moll. 53  
 Anatibetites, *Mojisovics*, Moll. 53  
 Anatomites, *Mojisovics*, Moll. 53  
 Anatroplites, *Mojisovics*, Moll. 53  
 Anaurus, *Simon*, Arachn. 18  
 Anchorius, *Casey*, Ins. 135  
 Andersonia, *Eoulenger*, Pisces 25  
 Andiodrilus, *Michaelsen*, Verm. 31  
 Androgyne, *Walsingham*, Ins. 287  
 Aneleus, *Emery*, Ins. 197  
 Anepsichetos, *Smith*, Ins. 252  
 Anepsicus, *Sharp*, Ins. 135  
 Aneuraps, *Sharp*, Ins. 133  
 Anexodes, *Abelle*, Ins. 155  
 Angusticardo, *Cossmann*, Moll. 85  
 Anisochroa, *Semenow*, Ins. 165  
 Anisoccelium, *Lühe*, Verm. 43  
 Anodontomerus, *Ashmead*, Ins. 202  
 Anolcites, *Mojisovics*, Moll. 53  
 Anomaloceras, *Hyatt*, Moll. 56  
 Anomalokellia, *Cossmann*, Moll. 86  
 Anomalomya, *Cossmann*, Moll. 90  
 Anomalomys, *Gaillard*, Mamm. 32  
 Anomalopteryx, *Kennel*, Ins. 284  
 Anomotania, *Cohn*, Verm. 40  
 Anonchotania, *Cohn*, Verm. 40  
 Anonychia, *Reuter*, Ins. 324  
 Anoplaspis, *Leonardi*, Ins. 333  
 Antartobium, *Tschischérine*, Ins. 117  
 Anteois, *Warren*, Ins. 264  
 Anthyreodou, *Ashmead*, Ins. 203  
 Antiplecta, *Warren*, Ins. 264  
 Apaidia, *Hampson*, Ins. 235  
 Aparescus, *Kolbe*, Ins. 173  
 Apatema, *Walsingham*, Ins. 287  
 Apateson, *Fowler*, Ins. 326  
 Apeleutherus, *Kirby*, Ins. 341  
 Aphænophyes, *Reuter*, Ins. 324  
 Aphelæoceras, *Hyatt*, Moll. 56  
 Aphidencyrtus, *Ashmead*, Ins. 212  
 Aphytis, *Howard*, Ins. 212  
 Apiococcus, *Hempel*, Ins. 333  
 Aporocotyle, *Odhner*, Verm. 43  
 Apotrogia, *Kirby*, Ins. 347  
 Apsidoceras, *Hyatt*, Moll. 56  
 Apterocis, *Perkins*, Ins. 160  
 Aræocerodes, *Blackburn*, Ins. 171  
 Archæoplus, *Ameghino*, Mamm. 34  
 Archæoseris, *Gregory*, Cœl. 21  
 Archilestidium, *Breddin*, Ins. 321  
 Archinycteribia, *Speiser*, Ins. 311  
 Arcidens, *Simpson*, Moll. 86  
 Arcidopsis, *Simpson*, Moll. 86  
 Arcopagiopsis, *Cossmann*, Moll. 83  
 Arctapila, *Du Buysson*, Ins. 151  
 Areliscus, *Jordan and Snyder*, Pisces 24  
 Argyrotheca, *Dall*, Brach. 6  
 Arotonaias, *Martens*, Moll. 86  
 Arthaberites, *Diener*, Moll. 53  
 Arthricocephalus, *Bergeron*, Crust. 48  
 Arthrodinus, *Reitter*, Ins. 160  
 Arthrodosis, *Reitter*, Ins. 160  
 Arthroschista, *Swinhoe*, Ins. 276  
 Arthula, *Cameron*, Ins. 203  
 Arystidictya, *Hall and Clarke*, Spong. 31  
 Asaphinella, *Cossmann*, Moll. 83  
 Asclerella, *Semenow*, Ins. 165  
 Ascopharynx, *Waite*, Mamm. 30  
 Asidesthes, *Fairmaire*, Ins. 161  
 Aspidoptera, *Lucas*, Ins. 264  
 Aspurgus, *Fairmaire*, Ins. 173  
 Astaconephrops, *Nobili*, Crust. 22  
 Astænorchestes, *Simon*, Arachn. 19  
 Astiotrema, *Looss*, Verm. 43  
 Astrocladus, *Verrill*, Ech. 120  
 Astrogeron, *Verrill*, Ech. 120  
 Astrosclera, *Lister*, Spong. 26  
 Asuridia, *Hampson*, Ins. 236  
 Atacira, *Swinhoe*, Ins. 252  
 Atactoglymma, *Heller*, Ins. 166  
 Aterpnodes, *Warren*, Ins. 265  
 Atopodonta, *Cossmann*, Moll. 83  
 Atosia, *Snellen*, Ins. 236  
 Atrytonopsis, *Godman*, Ins. 230  
 Attaphila, *Wheeler*, Ins. 348  
 Atthila, *Bergh*, Moll. 69  
 Auchenistius, *Evermann and Marsh*, Pisces 21  
 Auletrissa, *Breddin*, Ins. 314  
 Aulonotus, *Ashmead*, Ins. 207

- Auriculina, *Martini and Chemnitz*, Moll. 68  
 Auristomia, *Monterosato*, Moll. 78  
 Aurora, *Simpson*, Moll. 86  
 Austroopius, *Szépligeti*, Ins. 207  
 Autotela, *Weise*, Ins. 186  
 Avicenna, *Distant*, Ins. 314  
 Aviculoperna, *Cossmann*, Moll. 90  
 Aviculovulsa, *Cossmann*, Moll. 91  
 Axiothella, *Verrill*, Verm. 25  
 Azalais, *Grote*, Ins. 222
- Balanocephalus, *Harmer*, Verm. 50  
 Balclutha, *Kirkaldy*, Ins. 329  
 Baliena, *Cameron*, Ins. 203  
 Bambanagites, *Mojsisovics*, Moll. 53  
 Banchogastra, *Ashmead*, Ins. 203  
 Bariacus, *Fairmaire*, Ins. 161  
 Barrandeites, *Mojsisovics*, Moll. 54  
 Barrandoceras, *Hyatt*, Moll. 56  
 Barynaia, *Crosse and Fischer*, Moll. 86  
 Baryproctus, *Ashmead*, Ins. 207  
 Bathona, *Casey*, Ins. 187  
 Bathyluca, *Mayer*, Col. 14  
 Bathysciadium, *Dautzenberg and Fischer*, Moll. 82  
 Batrachichnus, *Woodworth*, Rept. 31  
 Beblecia, *Kirby*, Ins. 341  
 Bedeliolus, *Semenov*, Ins. 118  
 Belgica, *Jacobs*, Ins. 297  
 Beloceras, *Hyatt*, Moll. 54  
 Belomicroides, *Kohl*, Ins. 193  
 Bensonella, *Pilebry*, Moll. 65  
 Bernayia, *Cossmann*, Moll. 86  
 Berytinus, *Kirkaldy*, Ins. 321  
 Bessia, *Pocock*, Arachn. 19  
 Bichæta, *Bretscher*, Verm. 31  
 Bicornelia, *Friese*, Ins. 189  
 Bidessodes, *Régimbart*, Ins. 123  
 Billetia, *Joannis*, Ins. 236  
 Billingsites, *Hyatt*, Moll. 56  
 Bineurus, *Simpson*, Moll. 86  
 Biprorulus, *Breddin*, Ins. 314  
 Birchippia, *Green*, Ins. 333  
 Biroia, *Szépligeti*, Ins. 207  
 Blabioides, *Hampson*, Ins. 236  
 Blastomorpha, *Szépligeti*, Ins. 207  
 Blediotrogus, *Sharp*, Ins. 125  
 Blepharidia, *Püngeler*, Ins. 253  
 Boloria, *Moore*, Ins. 224  
 Bonnanus, *Jousseaume*, Moll. 65  
 Bonthaina, *Heller*, Ins. 166  
 Bothriocotyle, *Arloa*, Verm. 40  
 Bothrothorax, *Kraatz*, Ins. 144  
 Bothynoproctus, *Tschitscherine*, Ins. 118
- Botryodictya, *Hall and Clarke*, Spong. 28  
 Brachiosia, *Hampson*, Ins. 236  
 Brachybasis, *Reuter*, Ins. 324  
 Brachybasis, *Swinhoe*, Ins. 265  
 Brachycope, *Reichenow*, Aves 62  
 Brachycranium, *Ashmead*, Ins. 203  
 Brachygonia, *Walsingham*, Ins. 284  
 Brachyhammus, *Kolbe*, Ins. 173  
 Brachylagus, *Miller*, Mamm. 32  
 Brachyscelidiphaga, *Ashmead*, Ins. 212  
 Brachystomia, *Monterosato*, Moll. 78  
 Bradylemur, *Grandidier*, Mamm. 23  
 Brahmacerinus, *Sollas*, Ech. 132  
 Branchiodrilus, *Michaelsen*, Verm. 31  
 Brancoceras, *Hyatt*, Moll. 54  
 Brannerella, *Gilbert*, Pisces 21  
 Braunina, *Heider*, Verm. 43  
 Brontypena, *Holland*, Ins. 253  
 Bruandia, *Tutt*, Ins. 236  
 Bryomima, *Staudinger*, Ins. 253  
 Bryttosus, *Jordan and Snyder*, Pisces 18  
 Buchites, *Mojsisovics*, Moll. 54  
 Bullella, *Simpson*, Moll. 86  
 Bulloideus, *Simpson*, Moll. 86  
 Burria, *Brunner*, Ins. 349  
 Buzyges, *Godman*, Ins. 230  
 Byronia, *Matthew*, Verm. 25  
 Byrsinocoris, *Montandon*, Ins. 314
- Cacephatus, *Blackburn*, Ins. 171  
 Cacoschizus, *Sharp*, Ins. 171  
 Cacotrachelus, *Sharp*, Ins. 171  
 Cænognosis, *Walsingham*, Ins. 284  
 Cænolarra, *Cameron*, Ins. 194  
 Cænonaia, *Crosse and Fischer*, Moll. 86  
 Cænopimpla, *Cameron*, Ins. 203  
 Cafferia, *Simpson*, Moll. 86  
 Calapterote, *Holland*, Ins. 237  
 Calathospongia, *Hall and Clarke*, Spong. 31  
 Caleodinus, *Candèze*, Ins. 151  
 Calidota, *Dyar*, Ins. 237  
 Callibracon, *Ashmead*, Ins. 207  
 Callicryptus, *Ashmead*, Ins. 203  
 Callihornius, *Ashmead*, Ins. 207  
 Callinera, *Bergendal*, Verm. 36  
 Callipseustes, *Warren*, Ins. 265  
 Callisthenia, *Hampson*, Ins. 237  
 Callistocharis, *Pilebry*, Moll. 64  
 Callistotapes, *Sacco*, Moll. 83  
 Callithauma, *Turner*, Ins. 288

- Callonaisa*, *Simpson*, Moll. 86  
*Caloplisma*, *Crosse and Fischer*, Moll. 80  
*Calopompilus*, *Ashmead*, Ins. 194  
*Caltiephialtes*, *Ashmead*, Ins. 203  
*Calvinia*, *Nutting*, Cœl. 10  
*Calyptocome*, *Warren*, Ins. 265  
*Camptocincta*, *Schmiedeknecht*, Ins. 203  
*Campylocathaica*, *Andreae*, Moll. 62  
*Campyloneurus*, *Szépligeti*, Ins. 207  
*Canidiella*, *Ashmead*, Ins. 203  
*Capnura*, *Banks*, Ins. 340  
*Caprimima*, *Hampson*, Ins. 237  
*Carabops*, *Jacobson*, Ins. 118  
*Caragolus*, *Monterosato*, Moll. 81  
*Cardioglossa*, *Boulenger*, Rept. 27  
*Cardiostenus*, *Tschitscherine*, Ins. 118  
*Carinesta*, *Punnett*, Verm. 36  
*Carinocarcinus*, *Lörentz*, Crust. 23  
*Caripodia*, *Hampson*, Ins. 237  
*Carsinopodia*, *Hampson*, Ins. 237  
*Carthasis*, *Champion*, Ins. 321  
*Castaliella*, *Simpson*, Moll. 86  
*Castra*, *Kirkaldy*, Ins. 322  
*Castrella*, *Fuhrmann*, Verm. 37  
*Catenariopsis*, *Maplestone*, Bry. 6  
*Catenotoma*, *Cossmann and Pissarro*, Moll. 71  
*Catia*, *Godman*, Ins. 230  
*Caudiculatus*, *Simpson*, Moll. 86  
*Caulocera*, *Hampson*, Ins. 237  
*Celæceras*, *Hyatt*, Moll. 54  
*Celistus*, *Tschitscherine*, Ins. 118  
*Cenchritis*, *Martens*, Moll. 75  
*Cenoceras*, *Hyatt*, Moll. 56  
*Centroceras*, *Hyatt*, Moll. 57  
*Centrogonia*, *Cossmann*, Moll. 75  
*Cephaloraphidites*, *Schrammen*, Spong. 40  
*Cerasophila*, *Bingham*, Aves 51  
*Ceratodictya*, *Hall and Clarke*, Spong. 29  
*Ceratogastra*, *Ashmead*, Ins. 203  
*Cerithidium*, *Monterosato*, Moll. 74  
*Chærephon*, *Godman*, Ins. 230  
*Chætauchenium*, *Tschitscherine*, Ins. 119  
*Chætobroschus*, *Semenow*, Ins. 119  
*Chamberlainia*, *Simpson*, Moll. 86  
*Chamyla*, *Staudinger*, Ins. 254  
*Chancelia*, *Hagenmüller*, Moll. 59  
*Characodoma*, *Maplestone*, Bry. 6  
*Charieis*, *Burr*, Ins. 348  
*Charioserica*, *Brenke*, Ins. 141  
*Charminus*, *Thorell*, Arachn. 20  
*Chasmatoptera*, *Kirby*, Ins. 338  
*Chasmias*, *Ashmead*, Ins. 203  
*Chasmocarcinops*, *Alcock*, Crust. 23  
*Chauvetia*, *Monterosato*, Moll. 72  
*Chelonogastra*, *Ashmead*, Ins. 207  
*Chersodespœna*, *Sykes*, Moll. 80  
*Chestomorpha*, *Ashmead*, Ins. 212  
*Chicagocrinus*, *Weller*, Ech. 133  
*Chilocampyla*, *Busck*, Ins. 288  
*Chionella*, *Cossmann*, Moll. 83  
*Chionosia*, *Hampson*, Ins. 237  
*Chiriquia*, *Morse*, Ins. 352  
*Chiroteuthopsis*, *Pfeffer*, Moll. 53  
*Chitosa*, *Casey*, Ins. 125  
*Chlorodrepanis*, *Rothschild*, Aves 61  
*Chobautiella*, *Reitter*, Ins. 132  
*Chonopeltis*, *Thiele*, Crust. 41  
*Chromocryptus*, *Ashmead*, Ins. 203  
*Chromomicrodus*, *Ashmead*, Ins. 208  
*Chrysallactis*, *Hampson*, Ins. 238  
*Chrysochlorosia*, *Hampson*, Ins. 238  
*Chrysoscota*, *Hampson*, Ins. 238  
*Chrysozana*, *Hampson*, Ins. 238  
*Chunia*, *Mayer*, Cœl. 12  
*Cicerocrinus*, *Sollas*, Ech. 133  
*Cilus*, *Delfin*, Pisces 19  
*Cinctella*, *Monterosato*, Moll. 74  
*Circenita*, *Jousseume*, Moll. 84  
*Cirillia*, *Monterosato*, Moll. 71  
*Cissocryptus*, *Sharp*, Ins. 135  
*Cithariscius*, *Pocock*, Arachn. 20  
*Cixiopsis*, *Matsumura*, Ins. 326  
*Cladochæta*, *Coquillett*, Ins. 308  
*Clathromangelia*, *Monterosato*, Moll. 71  
*Clema*, *Semenow*, Ins. 147  
*Clenatodes*, *Scudder*, Ins. 352  
*Clepsydrospongia*, *Hall and Clarke*, Spong. 32  
*Clionites*, *Mojsisovics*, Moll. 54  
*Cloësia*, *Hampson*, Ins. 238  
*Clon*, *Semenow*, Ins. 152  
*Clymenopsis*, *Verrill*, Verm. 25  
*Clymenura*, *Verrill*, Verm. 25  
*Clypeastodes*, *Casey*, Ins. 187  
*Cnephora*, *Warren*, Ins. 266  
*Cobalopsis*, *Godman*, Ins. 230  
*Coccidencyrus*, *Ashmead*, Ins. 212  
*Coccophoctonus*, *Ashmead*, Ins. 212  
*Codeta*, *Simon*, Arachn. 20  
*Codinella*, *Kittl*, Moll. 81  
*Cœlocryptus*, *Sharp*, Ins. 135  
*Cœlocyba*, *Ashmead*, Ins. 213  
*Cœlodela*, *Shipley*, Verm. 40  
*Cœlohelia*, *Vaughan*, Cœl. 21  
*Cœlophoria*, *Mabille*, Ins. 254  
*Cœluromima*, *Warren*, Ins. 266  
*Colaxes*, *Simon*, Arachn. 20  
*Colgar*, *Kirkaldy*, Ins. 326



- Collastoma*, *Dörler*, Verm. 37  
*Colpometopus*, *Abeille*, Ins. 155  
*Colpospira*, *Donald*, Moll. 74  
*Cometopsylla*, *Froggatt*, Ins. 331  
*Compsidolon*, *Reuter*, Ins. 324  
*Compsobracon*, *Ashmead*, Ins. 208  
*Compsocryptus*, *Ashmead*, Ins. 203  
*Compsoteuthis*, *Pfeffer*, Moll. 53  
*Conacontia*, *Smith*, Ins. 254  
*Conicoda*, *Matsumura*, Ins. 326  
*Conilepia*, *Hampson*, Ins. 238  
*Conosia*, *Hampson*, Ins. 238  
*Conradiceras*, *Cossmann*, Moll. 57  
*Consingis*, *Simon*, Arachn. 20  
*Continua*, *Simon*, Arachn. 21  
*Copibryophila*, *Smith*, Ins. 254  
*Coralliozetus*, *Evermann and Marsh*, Pisces 21  
*Cordieria*, *Monterosato*, Moll. 71  
*Corellascidia*, *Hartmeyer*, Tun. 5  
*Corioxgryllus*, *Bolivar*, Ins. 349  
*Corunculina*, *Simpson*, Moll. 86  
*Costaticella*, *Maplestone*, Bry. 6  
*Crambidion*, *Mabille*, Ins. 277  
*Cranoceras*, *Hyatt*, Moll. 57  
*Craspedocerus*, *Auriaillius*, Ins. 173  
*Crasseomys*, *Miller*, Mamm. 30  
*Crassitesta*, *Simpson*, Moll. 86  
*Crassomicrodus*, *Ashmead*, Ins. 208  
*Cratilla*, *Kirby*, Ins. 341  
*Cratolarra*, *Cameron*, Ins. 194  
*Cressonianus*, *Ashmead*, Ins. 203  
*Crioniscus*, *Pérez*, Crust. 41  
*Crociasus*, *Breddin*, Ins. 322  
*Crosimus*, *Casey*, Ins. 135  
*Crossopleura*, *Monterosato*, Moll. 71  
*Cryodraco*, *Dollo*, Pisces 20  
*Cryptistyla*, *Warren*, Ins. 266  
*Cryptasasma*, *Walsingham*, Ins. 284  
*Cryptinglisia*, *Cockerell*, Ins. 334  
*Cryptocandona*, *Kaufmann*, Crust. 43  
*Cryptoclymenia*, *Hyatt*, Moll. 54  
*Cryptoideus*, *Ashmead*, Ins. 203  
*Cryptopolyzoon*, *Dendy*, Bry. 8  
*Cryptopteryx*, *Ashmead*, Ins. 203  
*Cryptotettix*, *Hancock*, Ins. 352  
*Crypturopsis*, *Ashmead*, Ins. 203  
*Ctenamphiura*, *Verrill*, Ech. 121  
*Ctenisophus*, *Raftrey*, Ins. 130  
*Ctenodesma*, *Simpson*, Moll. 87  
*Ctenosia*, *Hampson*, Ins. 238  
*Cumana*, *Coues*, Aves 34  
*Cuneocorbula*, *Cossmann*, Moll. 83  
*Cuneopsis*, *Simpson*, Moll. 87  
*Cunizza*, *Grote*, Ins. 222  
*Curelius*, *Casey*, Ins. 136  
*Curriea*, *Ashmead*, Ins. 208  
*Curtotomoderus*, *Pic*, Ins. 163  
*Cyathodictya*, *Hall and Clarke*, Spong. 33  
*Cycloceltites*, *Mojisiwics*, Moll. 54  
*Cyclomilta*, *Hampson*, Ins. 238  
*Cyclomya*, *Simpson*, Moll. 87  
*Cyclosiella*, *Hampson*, Ins. 238  
*Cyclosticta*, *Hampson*, Ins. 238  
*Cyclotellina*, *Cossmann*, Moll. 84  
*Cydippina*, *Dall*, Moll. 84  
*Cydrelchus*, *Pocock*, Arachn. 21  
*Cydrus*, *Godman*, Ins. 230  
*Cylichnina*, *Monterosato*, Moll. 70  
*Cylindrica*, *Simpson*, Moll. 87  
*Cymatoceras*, *Hyatt*, Moll. 57  
*Cymatoica*, *Dall*, Moll. 84  
*Cynapes*, *Simon*, Arachn. 21  
*Cyphoniscus*, *Verhoeff*, Crust. 38  
*Cyphopora*, *Warren*, Ins. 267  
*Cyphoserica*, *Brenke*, Ins. 141  
*Cypridopsella*, *Kaufmann*, Crust. 43  
*Cyptonychia*, *Hampson*, Ins. 238  
*Cyrnia*, *Walsingham*, Ins. 289  
*Cyrrhochroa*, *Kraatz*, Ins. 144  
*Cyrtengis*, *Reitter*, Ins. 185  
*Cyrtonaia*, *Crosse and Fischer*, Moll. 87  
*Cyrtotyphlus*, *Dodero*, Ins. 126  
*Cystephora*, *Hulst*, Ins. 267  
*Cytherocardia*, *Sacco*, Moll. 87  
*Dactylophorosoma*, *Verhoeff*, Myriop. 6  
*Dahlia*, *Pagenstecher*, Ins. 255  
*Dalliella*, *Simpson*, Moll. 87  
*Damiria*, *Fairmaire*, Ins. 173  
*Danubites*, *Mojisiwics*, Moll. 54  
*Daphnites*, *Mojisiwics*, Moll. 54  
*Darantoides*, *Hampson*, Ins. 238  
*Darrhula*, *Kirkaldy*, Ins. 329  
*Dasymysis*, *Holt and Beaumont*, Crust. 36  
*Dasypsylla*, *Froggatt*, Ins. 331  
*Dawsonoceras*, *Hyatt*, Moll. 57  
*Decolya*, *Bolivar*, Ins. 350  
*Decusa*, *Casey*, Ins. 126  
*Deinocoelonus*, *Perkins*, Ins. 167  
*Deinoptila*, *Warren*, Ins. 267  
*Deirocera*, *Hyatt*, Moll. 57  
*Delevielesia*, *Hagenmüller*, Moll. 59  
*Delmira*, *Cameron*, Ins. 208  
*Delphinobius*, *Fairmaire*, Ins. 141  
*Delphinonaia*, *Crosse and Fischer*, Moll. 87  
*Demostia*, *Kerremans*, Ins. 147

- Derbyia, *Lea*, Ins. 167  
 Deretus, *Gahan*, Ins. 161  
 Derogenes, *Lühe*, Verm. 43  
 Desana, *Swinhoe*, Ins. 255  
 Desmosyllis, *Verrill*, Verm. 25  
 Deuterobaris, *Looss*, Verm. 43  
 Diadiploceras, *Hyatt*, Moll. 57  
 Diadora, *Kerremans*, Ins. 147  
 Dialithoptera, *Hampson*, Ins. 239  
 Diallagma, *Smith*, Ins. 255  
 Dianthidium, *Cockerell*, Ins. 189  
 Diaphanidus, *Reitter*, Ins. 161  
 Diarhabdosia, *Hampson*, Ins. 239  
 Diarthroconnus, *Gunglbauer*, Ins. 131  
 Diaspidistia, *Hempel*, Ins. 334  
 Diaulomorpha, *Ashmead*, Ins. 213  
 Dichelosternus, *Gahan*, Ins. 173  
 Dicerura, *Kieffer*, Ins. 296  
 Dicharax, *Kobelt and Moellendorff*, Moll. 77  
 Dichorda, *Warren*, Ins. 267  
 Dicranobia, *Reitter*, Ins. 144  
 Diceranozygoma, *Seeley*, Rept. 25  
 Dictyon, *Fauvel*, Ins. 126  
 Dictyopharoides, *Fowler*, Ins. 326  
 Dictyospongia, *Hall and Clarke*, Spong. 29  
 Didymorchis, *Haswell*, Verm. 38  
 Digenopora, *Maplestone*, Bry. 6  
 Digoniaxis, *Jouseaume*, Moll. 67  
 Digrammus, *Fauvel*, Ins. 126  
 Dilobates, *Boulenger*, Rept. 27  
 Dimeroceras, *Hyatt*, Moll. 54  
 Dimorphites, *Mojsisovics*, Moll. 54  
 Dimorphoceras, *Hyatt*, Moll. 54  
 Dinocardium, *Dall*, Moll. 83  
 Dinometopus, *Gorham*, Ins. 155  
 Dinoura, *Ashmead*, Ins. 213  
 Diococostus, *Fuhrmann*, Verm. 40  
 Diolcogaster, *Ashmead*, Ins. 208  
 Dionchus, *Goto*, Verm. 43  
 Dionites, *Mojsisovics*, Moll. 54  
 Diplacodus, *Kirkaldy*, Ins. 322  
 Diplodetus, *Schlueter*, Ech. 88  
 Diplonyx, *Hampson*, Ins. 239  
 Diplophallus, *Fuhrmann*, Verm. 40  
 Diploporaria, *Nickles and Bassler*, Bry. 5  
 Diplosirenites, *Mojsisovics*, Moll. 54  
 Diploxiphus, *Horváth*, Ins. 315  
 Disaulota, *Hampson*, Ins. 239  
 Discaptothorax, *Blackburn*, Ins. 150  
 Discitoceras, *Hyatt*, Moll. 57  
 Discomya, *Simpson*, Moll. 87  
 Disconaias, *Crosse and Fischer*, Moll. 87  
 Disoidemata, *Hampson*, Ins. 239  
 Dithecodes, *Warren*, Ins. 267  
 Dittmarites, *Mojsisovics*, Moll. 54  
 Divaricardium, *Dollfus and Dautzenberg*, Moll. 83  
 Divarikellia, *Cossmann*, Moll. 87  
 Dodekaporus, *Attems*, Myriop. 7  
 Doleroceypria, *Kaufmann*, Crust. 44  
 Dolichodemus, *Looss*, Verm. 44  
 Dolichomerium, *Kirkaldy*, Ins. 323  
 Dolichopyge, *Warren*, Ins. 267  
 Dollfusia, *Cossmann*, Moll. 84  
 Dolloa, *Jordan*, Pisces 24  
 Dorcathispa, *Weise*, Ins. 179  
 Doridoxa, *Bergh*, Moll. 69  
 Dorpius, *Distant*, Ins. 315  
 Doryctomorpha, *Ashmead*, Ins. 208  
 Doryonychus, *Simon*, Arachn. 22  
 Drawida, *Michaelsen*, Verm. 32  
 Drepanites, *Mojsisovics*, Moll. 54  
 Drepanorhamphus, *Rothschild*, Aves 61  
 Drepanura, *Bergeron*, Crust. 48  
 Dromidiopsis, *Borradaile*, Crust. 24  
 Dromus, *Simpson*, Moll. 87  
 Drucia, *Warren*, Ins. 267  
 Dryomia, *Kieffer*, Ins. 296  
 Ducape, *Moore*, Ins. 225  
 Dudgeonea, *Hampson*, Ins. 239  
 Dyscharachthis, *Blackburn*, Ins. 150  
 Dyscliona, *Kirkpatrick*, Spong. 46  
 Dyslophocera, *Schenckling*, Ins. 158  
 Dysomma, *Perkins*, Ins. 167  
 Dystrigonisthis, *Blackburn*, Ins. 150  
 Echinasterias, *Stuertz*, Ech. 113  
 Echinodiscus, *Stuertz*, Ech. 113  
 Echinophilus, *Rathbun*, Crust. 24  
 Echinostella, *Stuertz*, Ech. 113  
 Echthrodoca, *Schmiedeknecht*, Ins. 204  
 Echthrogaster, *Blackburn*, Ins. 152  
 Ecitodulus, *Wasmann*, Ins. 126  
 Ecitogaster, *Wasmann*, Ins. 126  
 Ecitonidia, *Wasmann*, Ins. 126  
 Ecitophya, *Wasmann*, Ins. 126  
 Ecitoxenia, *Wasmann*, Ins. 126  
 Ecitoxenus, *Wasmann*, Ins. 126  
 Ecphoropsis, *Ashmead*, Ins. 204  
 Ecphylopsis, *Ashmead*, Ins. 208  
 Ectolcites, *Mojsisovics*, Moll. 54  
 Edaphoceras, *Hyatt*, Moll. 57  
 Edrabius, *Fauvel*, Ins. 126  
 Edwardsiastes, *Kirkaldy*, Ins. 329  
 Eglyrion, *Smith*, Ins. 255  
 Eidopompilus, *Kohl*, Ins. 194  
 Eiseniella, *Michaelsen*, Verm. 32  
 Elapheozygum, *Kuhlgatz*, Ins. 315

- Eleutherobia, *Pütter*, Cœl. 16  
 Elliptotellina, *Cossmann*, Moll. 84  
 Emoleptalea, *Looss*, Verm. 44  
 Emphylocoris, *Reuter*, Ins. 315  
 Empocryptus, *Sharp*, Ins. 136  
 Enclimatoceras, *Hyatt*, Moll. 57  
 Encolpius, *Simon*, Arachn. 22  
 Encyrtoccephalus, *Ashmead*, Ins. 213  
 Endomargarus, *Cossmann*, Moll. 83  
 Engyophlebus, *Karsch*, Ins. 239  
 Enicmodrilus, *Eisen*, Verm. 32  
 Enodiotrema, *Looss*, Verm. 44  
 Enspondus, *Blackburn*, Ins. 171  
 Enterognathus, *Giesbrecht*, Crust. 42  
 Eoöphyla, *Swinhoe*, Ins. 278  
 Eophiurites, *Sturtz*, Ech. 121  
 Eotiaris, *Lambert*, Ech. 92  
 Epæna, *Karsch*, Ins. 278  
 Epargemus, *Blackburn*, Ins. 171  
 Epeuryssa, *Matsumura*, Ins. 326  
 Ephemillus, *Semenow*, Ins. 165  
 Ephippioceras, *Hyatt*, Moll. 57  
 Epicharmus, *Simon*, Arachn. 22  
 Epicimelia, *Korb*, Ins. 267  
 Epiencyrtus, *Ashmead*, Ins. 213  
 Epiharpalus, *Reitter*, Ins. 119  
 Epimacha, *Kerremans*, Ins. 148  
 Epimecoideus, *Ashmead*, Ins. 204  
 Epimicrodus, *Ashmead*, Ins. 208  
 Epirhyssalus, *Ashmead*, Ins. 208  
 Episigalphus, *Ashmead*, Ins. 208  
 Epismilia, *Cockerell*, Ins. 186  
 Epitoxus, *Lewis*, Ins. 132  
 Eremiornis, *North*, Aves 51  
 Eremites, *Mojsisovics*, Moll. 54  
 Eremoceras, *Hyatt*, Moll. 57  
 Eretmoptera, *Kellogg*, Ins. 295  
 Eriopygidia, *Warren*, Ins. 268  
 Erioryzomus, *Bangs*, Mamm. 30  
 Eriphoserica, *Brenske*, Ins. 141  
 Erodinus, *Reitter*, Ins. 161  
 Erschoffia, *Swinhoe*, Ins. 268  
 Erythropimpla, *Ashmead*, Ins. 204  
 Estcourtiana, *Jacoby*, Ins. 179  
 Eteliscus, *Jordan and Snyder*, Pisces 18  
 Euagathia, *Szépligeti*, Ins. 208  
 Euarestus, *Lucas*, Ins. 268  
 Eucamptopus, *Pocock*, Arachn. 22  
 Eucarterus, *Reitter*, Ins. 119  
 Eucatagma, *Buck*, Ins. 289  
 Eucathaica, *Andreae*, Moll. 62  
 Euchilichthys, *Boulenger*, Pisces 25  
 Euchilomycterus, *Waite*, Pisces 30  
 Euchrysops, *Buller*, Ins. 228  
 Euclymene, *Verrill*, Verm. 25  
 Eucordylea, *Diets*, Ins. 289  
 Eucorystoides, *Ashmead*, Ins. 208  
 Euctenopus, *Ashmead*, Ins. 204  
 Euderopus, *Sharp*, Inst. 136  
 Eufernaldia, *Hult*, Ins. 278  
 Eugalera, *Brancsik*, Ins. 179  
 Eugauria, *Snellen*, Ins. 278  
 Eugerygone, *Finsch*, Aves 50  
 Euglyptonotus, *Gestro*, Ins. 161  
 Eugonosia, *Hampson*, Ins. 240  
 Eugrymæa, *Verrill*, Verm. 25  
 Eujoppa, *Szépligeti*, Ins. 208  
 Eulasicolpus, *Champion*, Ins. 323  
 Euleechia, *Dyar*, Ins. 240  
 Eumacrocentrus, *Ashmead*, Ins. 208  
 Eumegacetes, *Looss*, Verm. 44  
 Eumodiolus, *Ihering*, Moll. 91  
 Eumytilus, *Ihering*, Moll. 91  
 Eupecten, *Philippi*, Moll. 91  
 Euperizoma, *Warren*, Ins. 268  
 Euphanerops, *Woodward*, Pisces 31  
 Euphlycta, *Snellen*, Ins. 240  
 Euphoresia, *Brenske*, Ins. 141  
 Euphoridea, *Ashmead*, Ins. 208  
 Euphoriella, *Ashmead*, Ins. 208  
 Eupinoda, *Rafray*, Ins. 130  
 Eupisenus, *Casey*, Ins. 163  
 Eupolygaster, *Michaelsen*, Verm. 32  
 Eupolymnia, *Verrill*, Verm. 25  
 Eurosia, *Hampson*, Ins. 240  
 Euroto, *Godman*, Ins. 230  
 Euryptidia, *Hampson*, Ins. 240  
 Eusabena, *Snellen*, Ins. 278  
 Eusminthurus, *Börner*, Ins. 345  
 Eutany, *Tschitschérine*, Ins. 120  
 Eutapes, *Chiamenti*, Moll. 84  
 Eutelesia, *Hampson*, Ins. 240  
 Euthalenessa, *Darboux*, Verm. 25  
 Euthystylus, *Cossmann*, Moll. 74  
 Eutrichotis, *Swinhoe*, Ins. 278  
 Eutritia, *Casey*, Ins. 187  
 Eutromus, *Blackburn*, Ins. 171  
 Eutyichide, *Godman*, Ins. 230  
 Eutyphæus, *Michaelsen*, Verm. 32  
 Euurobracon, *Ashmead*, Ins. 208  
 Evagrius, *Distant*, Ins. 319  
 Exbalea, *Joussauze*, Moll. 66  
 Exosphæroma, *Stebbing*, Crust. 38  
 Fabagella, *Cossmann*, Moll. 83  
 Falcifer, *Rehn*, Mamm. 35  
 Falcula, *Jordan and Snyder*, Pisces 26  
 Faudelia, *Hagenmüller*, Moll. 59  
 Fauvelia, *Gravier*, Verm. 25  
 Favus, *Lanchester*, Crust. 25  
 Fernelius, *Distant*, Ins. 315  
 Feroniola, *Tschitschérine*, Ins. 120

- Ferreolomorpha, *Ashmead*, Ins. 194  
 Fidelia, *Friese*, Ins. 190  
 Fimoscolex, *Michaelsen*, Verm. 32  
 Flabinella, *Schubert*, Prot. 17  
 Flosshilda, *Kirkaldy*, Ins. 329  
 Folinæa, *Monterosato*, Moll. 73  
 Foudrasia, *Weise*, Ins. 180  
 Frechia, *Gregory*, Cœl. 22  
 Fretum, *Sykes*, Moll. 59  
 Frisimelica, *Distant*, Ins. 315  
 Froggattiella, *Leonardi*, Ins. 336  
 Fulcrella, *Cossmann*, Moll. 87  
 Fuscomitra, *Pallary*, Moll. 72  
 Fusconais, *Simpson*, Moll. 87  
  
 Galanageia, *Lucas*, Ins. 268  
 Gampsosteonyx, *Boulenger*, Rept. 27  
 Garretia, *Cossmann*, Moll. 61  
 Garudinistia, *Hampson*, Ins. 240  
 Garum, *Dall*, Moll. 84  
 Gastrioceras, *Hyatt*, Moll. 54  
 Gastroceratella, *Darboz*, Verm. 25  
 Gastroptychia, *Kobelt and Moellendorff*, Moll. 77  
 Gastrothuria, *Perrier*, Ech. 76  
 Gattyana, *McIntosh*, Verm. 26  
 Geisha, *Kirkaldy*, Ins. 327  
 Geisonoceras, *Hyatt*, Moll. 57  
 Genostele, *Walsingham*, Ins. 289  
 Genostoma, *Dörler*, Verm. 38  
 Gephuroceras, *Hyatt*, Moll. 54  
 Gerlachea, *Dollo*, Pisces 20  
 Gespanna, *Swinhoe*, Ins. 256  
 Geyerella, *Schellwien*, Brach. 6  
 Gibberulina, *Monterosato*, Moll. 72  
 Gibberulus, *Jousseau*, Moll. 74  
 Gibbiger, *Csiki*, Ins. 185  
 Gibbosula, *Simpson*, Moll. 87  
 Gillias, *Evermann and Marsh*, Pisces 21  
 Ginnania, *Monterosato*, Moll. 71  
 Gippsicola, *Hogg*, Arachn. 22  
 Giraffomyia, *Sharp*, Ins. 309  
 Glaphyserica, *Brenske*, Ins. 141  
 Glaucoda, *Karsch*, Ins. 279  
 Glaucosia, *Hampson*, Ins. 240  
 Glossostoma, *Günther*, Rept. 28  
 Glycyserica, *Brenske*, Ins. 141  
 Glyphandra, *Karsch*, Ins. 279  
 Glyphidites, *Mojsisovics*, Moll. 54  
 Glyptocolastes, *Ashmead*, Ins. 208  
 Glyptodoryctes, *Ashmead*, Ins. 209  
 Glyptogastra, *Ashmead*, Ins. 204  
 Gnamptonychia, *Hampson*, Ins. 240  
 Gnaphalocnemis, *Heller*, Ins. 139  
 Gnaphosoides, *Hogg*, Arachn. 22  
 Gnatholeophanes, *Kolbe*, Ins. 174  
 Gnathophya, *Schmiedeknecht*, Ins. 204  
 Gnesion, *Raffray*, Ins. 130  
 Gnorimoschema, *Busck*, Ins. 289  
 Godwinia, *Sykes*, Moll. 60  
 Goidelia, *Embleton*, Crust. 42  
 Gongyospongia, *Hall and Clarke*, Spong. 29  
 Goniceilus, *Sharp*, Ins. 136  
 Gonionemoides, *Mayer*, Cœl. 10  
 Goniospira, *Cossmann*, Moll. 74  
 Gonolabis, *Burr*, Ins. 347  
 Gononemertes, *Bergendal*, Verm. 36  
 Goossensia, *Cossmann*, Moll. 87  
 Gordonerius, *Distant*, Ins. 315  
 Gourbia, *Chrétien*, Ins. 290  
 Gradiella, *Kittl*, Moll. 75  
 Grammatodonax, *Dall*, Moll. 84  
 Grammatomya, *Dall*, Moll. 84  
 Grammopsis, *Aurivillius*, Ins. 174  
 Grandidieria, *Bourguignat*, Moll. 87  
 Graphocœcilius, *Enderlein*, Ins. 339  
 Graphonaias, *Crosse and Fischer*, Moll. 87  
 Graphosia, *Hampson*, Ins. 241  
 Graptasura, *Hampson*, Ins. 241  
 Gratusus, *Casey*, Ins. 137  
 Greeniella, *Cockerell*, Ins. 334  
 Griesbachites, *Mojsisovics*, Moll. 54  
 Griphodictya, *Hall and Clarke*, Spong. 31  
 Gronovus, *Casey*, Ins. 187  
 Grubeosyllis, *Verrill*, Verm. 26  
 Grypoceras, *Hyatt*, Moll. 57  
 Guembelites, *Mojsisovics*, Moll. 54  
 Guillemeia, *Sonthonnax*, Ins. 241  
 Gumbelina, *Egger*, Prot. 17  
 Gyalcephalus, *Looss*, Verm. 47  
 Gymnasura, *Hampson*, Ins. 241  
 Gymnochoristomma, *Strobl*, Ins. 307  
 Gymnochroma, *Hampson*, Ins. 241  
 Gymnopatagus, *Doederlein*, Ech. 94  
 Gymnophallus, *Odhner*, Verm. 44  
 Gynandrocarpa, *Michaelsen*, Tun. 6  
 Gypogyna, *Simon*, Arachn. 22  
  
 Habroleptopteryx, *Ashmead*, Ins. 213  
 Hadesina, *Warren*, Ins. 269  
 Hadrobunus, *Banks*, Arachn. 33  
 Hadropimpla, *Cameron*, Ins. 204  
 Hadropithecus, *Lorenz-Liburnau*, Mamm. 24  
 Hæmatomis, *Hampson*, Ins. 241  
 Hæmatosiphon, *Champion*, Ins. 324  
 Haidingerites, *Mojsisovics*, Moll. 54  
 Haimesiastræa, *Vaughan*, Cœl. 22  
 Haitufa, *Swinhoe*, Ins. 279

- Halixodes*, *Brucker and Trouessart*, Arachn. 35  
*Halloceras*, *Hyatt*, Moll. 57  
*Halodictya*, *Hall and Clarke*, Spong. 32  
*Halophanes*, *Warren*, Ins. 269  
*Halotus*, *Godman*, Ins. 231  
*Haloxenus*, *Perkins*, Ins. 167  
*Halyabbas*, *Distant*, Ins. 316  
*Hamlinia*, *Böhm*, Moll. 70  
*Hamonais*, *Bretscher*, Verm. 32  
*Hamotopsis*, *Raffray*, Ins. 130  
*Haplobainosoma*, *Verhoeff*, Myriop. 7  
*Harkeria*, *Cameron*, Ins. 209  
*Harnostomum*, *Braun*, Verm. 44  
*Harpalobius*, *Reitter*, Ins. 120  
*Harpaloderus*, *Reitter*, Ins. 120  
*Harpaloxys*, *Reitter*, Ins. 120  
*Harrimania*, *Ritter*, Verm. 50  
*Harrimaniella*, *Ashmead*, Ins. 204  
*Haswellia*, *Darbois*, Verm. 26  
*Haterius*, *Simon*, Arachn. 23  
*Hauerites*, *Mojsisovics*, Moll. 54  
*Haugiceras*, *Cossmann*, Moll. 54  
*Helicodictya*, *Hall and Clarke*, Spong. 29  
*Helicoprion*, *Karpinsky*, Pisces 33  
*Helictites*, *Mojsisovics*, Moll. 54  
*Heliosia*, *Hampson*, Ins. 241  
*Hemenasius*, *Ashmead*, Ins. 213  
*Hemencyrtus*, *Ashmead*, Ins. 213  
*Hemibuthus*, *Pocock*, Arachn. 15  
*Heminautilus*, *Hyatt*, Moll. 54  
*Hemipsilia*, *Hampson*, Ins. 241  
*Hemisyllis*, *Verrill*, Verm. 26  
*Hendecaneura*, *Walsingham*, Ins. 285  
*Henicopygus*, *Ashmead*, Ins. 213  
*Henricohahnia*, *Breddin*, Ins. 322  
*Henseniot euthis*, *Pfeffer*, Moll. 53  
*Herchunda*, *Swinhoe*, Ins. 257  
*Herdmanella*, *Darbois*, Verm. 26  
*Herma*, *Weise*, Ins. 180  
*Hermachastes*, *Pocock*, Arachn. 23  
*Hermania*, *Monterosato*, Moll. 70  
*Herus*, *Rehn*, Ins. 353  
*Hesperodes*, *Coyllett*, Ins. 297  
*Hesperoscolex*, *Michaelsen*, Verm. 32  
*Heterochemmis*, *Cambridge*, Arachn. 23  
*Heterogyra*, *Küttl*, Moll. 74  
*Heteroligus*, *Kolbe*, Ins. 143  
*Heteromorphysa*, *Verrill*, Verm. 26  
*Heterophrictus*, *Pocock*, Arachn. 23  
*Heteroserica*, *Brenske*, Ins. 141  
*Hexactinomyxon*, *Stolc*, Prot. 25  
*Hexameroceras*, *Hyatt*, Moll. 57  
*Hilda*, *Kirkaldy*, Ins. 329  
*Himertosoma*, *Schmiedeknecht*, Ins. 204  
*Hindola*, *Kirkaldy*, Ins. 327  
*Hisingeraster*, *Stuertz*, Ech. 114  
*Hofmannia*, *Pagenstecher*, Ins. 294  
*Holcencyrtus*, *Ashmead*, Ins. 213  
*Holochrea*, *Hampson*, Ins. 241  
*Holojoppa*, *Szépligeti*, Ins. 209  
*Holosternus*, *Sharp*, Ins. 136  
*Holoterpna*, *Püngeler*, Ins. 269  
*Homaledra*, *Busck*, Ins. 290  
*Homalocolpura*, *Breddin*, Ins. 319  
*Homerites*, *Mojsisovics*, Moll. 54  
*Homoceras*, *Hyatt*, Moll. 54  
*Homophylax*, *Banks*, Ins. 337  
*Homostichanthus*, *Duerden*, Coel. 18  
*Hoplauchenium*, *Tschitschérine*, Ins. 120  
*Hoplitalysia*, *Ashmead*, Ins. 209  
*Hoplobunus*, *Banks*, Arachn. 33  
*Hoplochaetella*, *Michaelsen*, Verm. 32  
*Horniolus*, *Weise*, Ins. 186  
*Hoylia*, *Cossmann*, Moll. 53  
*Hudsonaster*, *Stuertz*, Ech. 114  
*Hvidodes*, *Swinhoe*, Ins. 279  
*Hyalocampa*, *Warren*, Ins. 269  
*Hyarachne*, *Thorell*, Arachn. 23  
*Hyatticeras*, *Cossmann*, Moll. 57  
*Hybotettix*, *Hancock*, Ins. 353  
*Hydriodictya*, *Hall and Clarke*, Spong. 30  
*Hygrogeus*, *Rey*, Ins. 127  
*Hylaschna*, *Sjöstedt*, Ins. 341  
*Hylobius*, *Hogg*, Arachn. 23  
*Hypæus*, *Simon*, Arachn. 23  
*Hypagoptera*, *Hampson*, Ins. 241  
*Hypareva*, *Hampson*, Ins. 241  
*Hyperborea*, *Gram-Grshimailo*, Ins. 241  
*Hypermaepha*, *Hampson*, Ins. 241  
*Hyperperissa*, *Swinhoe*, Ins. 290  
*Hyperthagylla*, *Hampson*, Ins. 241  
*Hyphantænia*, *Hall and Clarke*, Spong. 32  
*Hypodoryctes*, *Kokujew*, Ins. 209  
*Hypomicrogaster*, *Ashmead*, Ins. 209  
*Hyposiccia*, *Hampson*, Ins. 242  
*Hyriana*, *Simpson*, Moll. 87  
*Hyriogona*, *Warren*, Ins. 269  
*Hystriochoscelus*, *Walsingham*, Ins. 285  
*Ichneutidea*, *Ashmead*, Ins. 209  
*Iohnium*, *Sollas*, Verm. 26

- Ictidosuchus, *Broom*, Rept. 25  
 Iheringella, *Pilsbry*, Moll. 87  
 Ilemodes, *Hampson*, Ins. 242  
 Ilendus, *Casey*, Ins. 137  
 Immersidens, *Pilsbry and Vanatta*, Moll. 66  
 Incolia, *Casey*, Ins. 163  
 Indoscitalinus, *Heller*, Ins. 127  
 Ingrisma, *Fairmaire*, Ins. 144  
 Intoshella, *Darboz*, Verm. 26  
 Irgilla, *Swinhoe*, Ins. 279  
 Isactinia, *Carlgren*, Cœl. 18  
 Isaloidea, *Cambridge*, Arachn. 23  
 Isastrocœnia, *Gregory*, Cœl. 22  
 Ischikauia, *Jordan and Snyder*, Pisces 26  
 Ischnopteryx, *Enderlein*, Ins. 339  
 Ischyrocnemopsis, *Ashmead*, Ins. 204  
 Iscedwardsia, *Carlgren*, Cœl. 18  
 Isophellia, *Carlgren*, Cœl. 18  
 Istlarius, *Jordan and Snyder*, Pisces 24  
 Jaekelaster, *Stuertz*, Ech. 114  
 Jamaicastes, *Kirkaldy*, Ins. 327  
 Janetiella, *Kieffer*, Ins. 296  
 Janirella, *Sayce*, Crust. 38  
 Jheringula, *Sars*, Crust. 40  
 Joannisia, *Monterosato*, Moll. 70  
 Johania, *Monterosato*, Moll. 70  
 Joppoceras, *Ashmead*, Ins. 204  
 Jordaniella, *Chaster*, Moll. 79  
 Jovites, *Mojsisovics*, Moll. 55  
 Kahlia, *Ashmead*, Ins. 209  
 Kakopoda, *Smith*, Ins. 257  
 Kalidasa, *Kirkaldy*, Ins. 327  
 Kalula, *Distant*, Ins. 316  
 Kareius, *Jordan and Snyder*, Pisces 24  
 Karschia, *Förster*, Ins. 342  
 Karyamœba, *Giglio-Tos*, Prot. 25  
 Katantodesmus, *Attems*, Myriop. 7  
 Kauaia, *Sykes*, Moll. 67  
 Kernadecella, *Darboz*, Verm. 26  
 Kerunia, *Mayer-Eymar*, Moll. 53  
 Kionoceras, *Hyatt*, Moll. 57  
 Knemiceras, *Böhm*, Moll. 55  
 Kobya, *Gregory*, Cœl. 22  
 Kochia, *Pallary*, Moll. 68  
 Kœnikea, *Wolcott*, Arachn. 36  
 Koninckioceras, *Hyatt*, Moll. 57  
 Kophinoceras, *Hyatt*, Moll. 57  
 Krisna, *Kirkaldy*, Ins. 329  
 Kruperia, *Verhoeff*, Myriop. 7  
 Lacertobelus, *Gorham*, Ins. 185  
 Læliaena, *Sahlberg*, Ins. 124  
 Lævirostris, *Simpson*, Moll. 87  
 Lagarocrinus, *Jaekel*, Ech. 139  
 Lamadatha, *Cameron*, Ins. 209  
 Lamellidens, *Simpson*, Moll. 88  
 Lamprochloë, *Hampson*, Ins. 242  
 Lamprolophus, *Busck*, Ins. 290  
 Lamprosia, *Hampson*, Ins. 242  
 Lamprostola, *Hampson*, Ins. 242  
 Lamprotula, *Simpson*, Moll. 88  
 Lapidus, *Simpson*, Moll. 88  
 Lapsias, *Simon*, Arachn. 24  
 Lasiocheiroidea, *Champion*, Ins. 323  
 Lasiocolpoides, *Champion*, Ins. 323  
 Lasioharpalus, *Reitter*, Ins. 120  
 Lasiopsylla, *Froggatt*, Ins. 331  
 Lathochlora, *Warren*, Ins. 270  
 Lathrædœus, *Breddin*, Ins. 316  
 Laubriereia, *Cossmann*, Moll. 88  
 Leanyinus, *Raffray*, Ins. 130  
 Lebedictya, *Hall and Clarke*, Spong. 30  
 Lecontea, *Olivier*, Ins. 156  
 Leiometopona, *Brancsik*, Ins. 180  
 Leioprora, *Turner*, Ins. 290  
 Lelymena, *Karsch*, Ins. 242  
 Lens, *Simpson*, Moll. 88  
 Leonidia, *Cockerell*, Ins. 165  
 Leontochroma, *Walsingham*, Ins. 285  
 Leovitius, *Distant*, Ins. 316  
 Lepidopoda, *Hampson*, Ins. 234  
 Lepopteryx, *Speiser*, Ins. 311  
 Leprotella, *Jacoby*, Ins. 181  
 Leptobatopsis, *Ashmead*, Ins. 204  
 Leptocypris, *Boulenger*, Pisces 26  
 Leptodemus, *Reuter*, Ins. 320  
 Leptoglenus, *Reitter*, Ins. 127  
 Leptolarra, *Cameron*, Ins. 194  
 Leptolinus, *Reitter*, Ins. 127  
 Leptonaias, *Crosse and Fischer*, Moll. 88  
 Leptopepla, *Hampson*, Ins. 242  
 Leptophylax, *Banks*, Ins. 337  
 Leptostyrax, *Williston*, Pisces 33  
 Lepturophis, *Boulenger*, Rept. 21  
 Leptusina, *Ganglbauer*, Ins. 127  
 Letoia, *Simon*, Arachn. 24  
 Leucasiella, *Banks*, Arachn. 33  
 Leucocharis, *Pilsbry*, Moll. 65  
 Leucocyphoniscus, *Verhoeff*, Crust. 38  
 Leucorhodia, *Hampson*, Ins. 243  
 Leucoxena, *Warren*, Ins. 270  
 Leufroyia, *Monterosato*, Moll. 71  
 Leuronychus, *Banks*, Arachn. 32  
 Levinseniella, *Ward*, Verm. 44

- Levipalifer, *Vaughan*, Cœl. 22  
 Limacopsis, *Simroth*, Moll. 60  
 Limnerium, *Ashmead*, Ins. 205  
 Limnodytes, *Marchal*, Ins. 215  
 Limnosaurus, *Nopcea*, Rept. 22  
 Limnotragus, *Slater and Thomas*,  
     Mamm. 33  
 Linidiella, *Jousseume*, Moll. 80  
 Liochthebius, *Sahlberg*, Ins. 124  
 Liosigalphus, *Ashmead*, Ins. 209  
 Liotryphon, *Ashmead*, Ins. 205  
 Lipsotelus, *Walsingham*, Ins. 285  
 Lissacharis, *Warren*, Ins. 270  
 Lissochlora, *Warren*, Ins. 270  
 Litargellus, *Casey*, Ins. 137  
 Lithoprocra, *Hampson*, Ins. 243  
 Litoceras, *Hyatt*, Moll. 57  
 Lobarthron, *Semenow*, Ins. 174  
 Lobopola, *Warren*, Ins. 270  
 Longipalpa, *Pagenstecher*, Ins. 270  
 Lophocrotaphus, *Gorham*, Ins. 185  
 Lophophysema, *Schulze*, Spong. 28  
 Lostianus, *Desbrochers*, Ins. 168  
 Loxocardium, *Cossmann*, Moll. 83  
 Ludovicia, *Cossmann*, Moll. 88  
 Lunigera, *Hendel*, Ins. 309  
 Luperocella, *Jacoby*, Ins. 181  
 Lutricularia, *Monterosato*, Moll. 84  
 Lybastes, *Kirkaldy*, Ins. 319  
 Lycomorhodes, *Hampson*, Ins. 243  
 Lycoteuthis, *Pfeffer*, Moll. 53  
 Lycotharses, *Thorell*, Arachn. 24  
 Lymantriopsis, *Hampson*, Ins. 243  
 Lymphosporidium, *Calkins*, Prot. 25  
 Lyramma, *Breddin*, Ins. 322  
 Lyrodes, *Horváth*, Ins. 316  
 Lyropupa, *Pilsbry*, Moll. 66  
  
 Macaliopsis, *Cossmann*, Moll. 84  
 Macedonia, *Hogg*, Arachn. 24  
 Macopeus, *Simon*, Arachn. 24  
 Macrocossus, *Aurivillius*, Ins. 243  
 Macrodanuria, *Sjöstedt*, Ins. 348  
 Macrodyctium, *Ashmead*, Ins. 209  
 Macroneuroides, *Warren*, Ins. 270  
 Macroprionus, *Semenow*, Ins. 174  
 Macroisia, *Hampson*, Ins. 243  
 Macrostromion, *Szepligeti*, Ins. 209  
 Macrostromoderus, *Pic*, Ins. 164  
 Macrotracheliella, *Champion*, Ins.  
     323  
 Maelonoceras, *Hyatt*, Moll. 57  
 Mæneceras, *Hyatt*, Moll. 55  
 Mænola, *Simon*, Arachn. 25  
 Maidana, *Srinhoe*, Ins. 270  
 Maldanopsis, *Verrill*, Verm. 27  
 Malgassus, *Horváth*, Ins. 316  
  
 Mantibaria, *Kirby*, Ins. 215  
 Manticoceras, *Hyatt*, Moll. 55  
 Mantisatta, *Warburton*, Arachn. 25  
 Maphoca, *Casey*, Ins. 160 and Cor-  
     rigenda  
 Masonia, *Tutt*, Ins. 243  
 Mastodictya, *Hall and Clarke*,  
     Spong. 30  
 Mastor, *Godman*, Ins. 231  
 Mazatlanina, *Dall*, Moll. 71  
 Mayeria, *Verrill*, Verm. 27  
 Meca, *Karach*, Ins. 280  
 Mecaphesa, *Simon*, Arachn. 25  
 Medionidus, *Simpson*, Moll. 88  
 Megachætina, *Michaelson*, Verm. 32  
 Megadysdercus, *Breddin*, Ins. 321  
 Megajoppa, *Szepligeti*, Ins. 209  
 Megalomum, *Szepligeti*, Ins. 209  
 Megalopharynx, *Brauer*, Pisces 29  
 Megaloptidia, *Cockerell*, Ins. 190  
 Megalothorax, *Willem*, Ins. 345  
 Megarhyssa, *Ashmead*, Ins. 205  
 Megastomia, *Monterosato*, Moll. 79  
 Megistias, *Godman*, Ins. 231  
 Melaleucia, *Hampson*, Ins. 243  
 Melampodius, *Distant*, Ins. 316  
 Melanobracon, *Ashmead*, Ins. 209  
 Melanochræa, *Kraatz*, Ins. 144  
 Melanocoris, *Champion*, Ins. 323  
 Melanographia, *Hampson*, Ins. 243  
 Meleagroteuthis, *Pfeffer*, Moll. 53  
 Melicharia, *Kirkaldy*, Ins. 327  
 Melinodea, *Jacoby*, Ins. 181  
 Melobasina, *Kerremans*, Ins. 148  
 Menardus, *Distant*, Ins. 319  
 Mendola, *Breddin*, Ins. 322  
 Menechirus, *Hartmann*, Ins. 168  
 Menon, *Hedley*, Moll. 79  
 Meraulax, *Tschitscherine*, Ins. 121  
 Merisca, *Dall*, Moll. 84  
 Meromyzobia, *Ashmead*, Ins. 213  
 Meropalpus, *Tschitscherine*, Ins. 121  
 Mesachorutes, *Abelton*, Ins. 345  
 Mesoadapis, *Lorenz-Liburnau*,  
     Mamm. 24  
 Mesoborus, *Pellegrin*, Pisces 27  
 Mesocentrus, *Szepligeti*, Ins. 209  
 Mesochasmoceras, *Foord*, Moll. 57  
 Mesodromilites, *Woodward*, Crust.  
     28  
 Mesonaia, *Cross and Fischer*, Moll.  
     88  
 Mesospira, *Cossmann*, Moll. 75  
 Mesostenoides, *Ashmead*, Ins. 205  
 Messagria, *Simon*, Arachn. 25  
 Metacocerna, *Hyatt*, Moll. 57  
 Metallosia, *Hampson*, Ins. 243  
 Metalobosia, *Hampson*, Ins. 243

- Metalycaeus*, *Pilsbry*, Moll. 77  
*Metamelanius*, *Tschitscherine*, Ins. 121  
*Metareva*, *Hampson*, Ins. 244  
*Metarhyssa*, *Ashmead*, Ins. 205  
*Metasibirites*, *Mojsisovics*, Moll. 55  
*Metatirolites*, *Mojsisovics*, Moll. 55  
*Metatobias*, *Cambridge*, Arachn. 25  
*Metatrichia*, *Coquillett*, Ins. 302  
*Metaxia*, *Monterosato*, Moll. 74  
*Meteoridea*, *Ashmead*, Ins. 209  
*Meterythrosia*, *Hampson*, Ins. 244  
*Metethmos*, *Gregory*, Cœl. 22  
*Meteugoa*, *Hampson*, Ins. 244  
*Meteura*, *Hampson*, Ins. 244  
*Methion*, *Godman*, Ins. 231  
*Metiscus*, *Godman*, Ins. 231  
*Metopina*, *Norman*, Crust. 39  
*Metopta*, *Swinhoe*, Ins. 258  
*Metostracon*, *Pilsbry*, Moll. 63  
*Metriochoa*, *Busck*, Ins. 291  
*Metrocles*, *Godman*, Ins. 231  
*Metroliaesthes*, *Ransom*, Verm. 41  
*Metron*, *Godman*, Ins. 231  
*Micabralia*, *Pfeffer*, Moll. 53  
*Micragasma*, *Sahlberg*, Ins. 124  
*Micraphthona*, *Jacoby*, Ins. 182  
*Micrella*, *Bergh*, Moll. 70  
*Microbdella*, *Moore*, Verm. 35  
*Microcænocoelis*, *Breddin*, Ins. 320  
*Microcorses*, *Walsingham*, Ins. 285  
*Microctenucha*, *Warren*, Ins. 280  
*Microcypriis*, *Kaufmann*, Crust. 45  
*Microhermesia*, *Jacoby*, Ins. 182  
*Micromallosia*, *Pic*, Ins. 174  
*Micromichilus*, *Sahlberg*, Ins. 138  
*Micronaias*, *Simpson*, Moll. 88  
*Micronyassa*, *Bourguignat*, Moll. 75  
*Microphallus*, *Ward*, Verm. 44  
*Microscaphidium*, *Looss*, Verm. 44  
*Microtelocerus*, *Reuter*, Ins. 319  
*Microtes*, *Scudder*, Ins. 353  
*Microtrichia*, *Brenske*, Ins. 142  
*Microtropites*, *Mojsisovics*, Moll. 55  
*Milititsa*, *Burr*, Ins. 351  
*Mimoceras*, *Hyatt*, Moll. 55  
*Mimocharis*, *Warren*, Ins. 271  
*Mimophantia*, *Matsumura*, Ins. 327  
*Mimosina*, *Millett*, Prot. 19  
*Mintopola*, *Hampson*, Ins. 244  
*Mischoxorides*, *Ashmead*, Ins. 205  
*Misumenoides*, *Cambridge*, Arachn. 25  
*Misumenops*, *Cambridge*, Arachn. 26  
*Mixtila*, *Swinhoe*, Ins. 258  
*Mnasalcas*, *Godman*, Ins. 231  
*Mnasilus*, *Godman*, Ins. 231  
*Mnasinous*, *Godman*, Ins. 231  
*Mnasitheus*, *Godman*, Ins. 231  
*Mnesithetis*, *Swinhoe*, Ins. 271  
*Mnesitheus*, *Thorell*, Arachn. 26  
*Mocquersia*, *Fleutiaux*, Ins. 153  
*Modiella*, *Monterosato*, Moll. 91  
*Mœris*, *Godman*, Ins. 231  
*Mojsvaroceras*, *Hyatt*, Moll. 57  
*Molamba*, *Casey*, Ins. 187  
*Molo*, *Godman*, Ins. 231  
*Monalysidium*, *Chapman*, Prot. 19  
*Monochætophora*, *Hendel*, Ins. 309  
*Monocoloptera*, *Karsch*, Ins. 342  
*Monoctophora*, *Lucas*, Ins. 271  
*Monoptilota*, *Hulst*, Ins. 280  
*Monorhaphis*, *Schulze*, Spong. 37  
*Monotaxis*, *Hampson*, Ins. 244  
*Monothea*, *Nutting*, Cœl. 11  
*Morys*, *Godman*, Ins. 231  
*Mucia*, *Godman*, Ins. 231  
*Multioralis*, *Mayer*, Cœl. 11  
*Munsterites*, *Mojsisovics*, Moll. 55  
*Munsteroceras*, *Hyatt*, Moll. 55  
*Myiodola*, *Fairmaire*, Ins. 174  
*Myosoma*, *Robertson*, Bry. 5  
*Myrmecochilus*, *Wassmann*, Ins. 144  
*Myrsopsis*, *Sacco*, Moll. 84  
*Nædyceras*, *Hyatt*, Moll. 57  
*Naillenla*, *Eisen*, Verm. 33  
*Nanomutilla*, *André*, Ins. 195  
*Narragodes*, *Warren*, Ins. 271  
*Narthecophora*, *Smith*, Ins. 258  
*Nasus*, *Simpson*, Moll. 88  
*Nathrenus*, *Casey*, Ins. 136  
*Nea*, *Heller*, Ins. 168  
*Neacomys*, *Thomas*, Mamm. 30  
*Næroporomya*, *Cossmann*, Moll. 83  
*Neagylla*, *Hampson*, Ins. 244  
*Nealces*, *Simon*, Arachn. 26  
*Nealyda*, *Diets*, Ins. 291  
*Neasura*, *Hampson*, Ins. 244  
*Nematogenia*, *Eisen*, Verm. 33  
*Nemesiellus*, *Pocock*, Arachn. 26  
*Neoblacus*, *Ashmead*, Ins. 210  
*Neoblavla*, *Hampson*, Ins. 244  
*Neocerata*, *Coquillett*, Ins. 296  
*Neochrysa*, *Warren*, Ins. 271  
*Neocoptengis*, *Heller*, Ins. 185  
*Neolenus*, *Matthew*, Crust. 48  
*Neolepton*, *Monterosato*, Moll. 88  
*Neolycaon*, *Blackburn*, Inst. 150  
*Neomerimnetes*, *Blackburn*, Ins. 168  
*Neonola*, *Hampson*, Ins. 244  
*Neophylax*, *Ashmead*, Ins. 210



- Neopimpla*, *Ashmead*, Ins. 205  
*Neoplynes*, *Hampson*, Ins. 244  
*Neopolyarthron*, *Semenov*, Ins. 175  
*Neoproductus*, *Nikitin*, Brach. 6  
*Neoptinus*, *Gahan*, Ins. 159  
*Neoscaptia*, *Hampson*, Ins. 244  
*Neoschenobia*, *Hampson*, Ins. 280  
*Neoscribiger*, *Blackburn*, Ins. 158  
*Neospirifer*, *Nikitin*, Brach. 6  
*Neosterrha*, *Warren*, Ins. 271  
*Neostictoptera*, *Druce*, Ins. 258  
*Neozeneudes*, *Lea*, Ins. 168  
*Nephelomilta*, *Hampson*, Ins. 244  
*Nephelosia*, *Hampson*, Ins. 244  
*Nephriticeras*, *Hyatt*, Moll. 57  
*Nephronaias*, *Crosse and Fischer*, Moll. 88  
*Nesacinopus*, *Semenov*, Ins. 121  
*Nesopupa*, *Pilsbry*, Moll. 66  
*Nesotocus*, *Perkins*, Ins. 168  
*Nessula*, *Breddie*, Ins. 316  
*Netocertoides*, *Mayer*, Cœl. 11  
*Neurocena*, *Kirby*, Ins. 342  
*Neurostigma*, *Enderlein*, Ins. 339  
*Neweliskoia*, *Grum-Grahimailo*, Ins. 244  
*Nicephora*, *Bolivar*, Ins. 351  
*Niobia*, *Mayer*, Cœl. 11  
*Niphella*, *Bolivar*, Ins. 351  
*Nirvana*, *Kirkaldy*, Ins. 330  
*Nodozana*, *Hampson*, Ins. 245  
*Noegus*, *Simon*, Arachn. 26  
*Nolosia*, *Hampson*, Ins. 245  
*Nomismoceras*, *Hyatt*, Moll. 55  
*Normandia*, *Pic*, Ins. 138  
*Nostima*, *Coquillett*, Ins. 309  
*Nothosialbia*, *Swinhoe*, Ins. 280  
*Nothosympycnus*, *Wheeler*, Ins. 304  
*Notocerus*, *Hancock*, Ins. 353  
*Notocoelis*, *Lewis*, Ins. 133  
*Notecia*, *Blackburn*, Ins. 171  
*Notolipernes*, *Blackburn*, Ins. 186  
*Novelsia*, *Casey*, Ins. 138  
*Nudaridia*, *Hampson*, Ins. 245  
*Nuditheca*, *Nutting*, Cœl. 11  
*Nudosia*, *Hampson*, Ins. 245  
*Nuttallia*, *Dall*, Moll. 84  
*Nyasella*, *Bourguignat*, Moll. 75  
*Nyassia*, *Bourguignat*, Moll. 75  
*Nyassomelania*, *Bourguignat*, Moll. 75  
*Nycteribosca*, *Speiser*, Ins. 312  
*Nyctosia*, *Hampson*, Ins. 245  
*Ochrodema*, *Reuter*, Ins. 324  
*Ocrosia*, *Hampson*, Ins. 245  
*Octotremacia*, *Gregory*, Cœl. 16  
*Ocyusida*, *Bernhauer*, Ins. 128  
*Odontiomorpha*, *Jacoby*, Ins. 182  
*Odontoderus*, *Clouët*, Ins. 140  
*Odontokrepis*, *Attems*, Myriop. 7  
*Odontolarra*, *Cameron*, Ins. 195  
*Odonturella*, *Bolivar*, Ins. 351  
*Œdaleosia*, *Hampson*, Ins. 245  
*Œdematarcha*, *Swinhoe*, Ins. 280  
*Œnonogastra*, *Ashmead*, Ins. 210  
*Oeonus*, *Godman*, Ins. 231  
*Oethecoctonus*, *Ashmead*, Ins. 215  
*Ogmophorus*, *Kraatz*, Ins. 144  
*Oligoryzomys*, *Bangs*, Mamm. 30  
*Olona*, *Snellen*, Ins. 246  
*Omahania*, *Eisen*, Verm. 33  
*Omirosia*, *Hampson*, Ins. 246  
*Omphalophora*, *Becker*, Ins. 302  
*Oniscomorpha*, *Arrow*, Ins. 134  
*Onomastus*, *Simon*, Arachn. 26  
*Onophas*, *Godman*, Ins. 232  
*Ontsira*, *Cameron*, Ins. 210  
*Onychipodia*, *Hampson*, Ins. 246  
*Ooencyrtus*, *Ashmead*, Ins. 214  
*Oonoceras*, *Hyatt*, Moll. 57  
*Ooperipatus*, *Dendy*, Myriop. 11  
*Opatrocynus*, *Breddie*, Ins. 317  
*Opheloideus*, *Ashmead*, Ins. 205  
*Ophientrema*, *Verrill*, Ech. 123  
*Ophiobysella*, *Verrill*, Ech. 123  
*Ophiochondrella*, *Verrill*, Ech. 123  
*Ophiogastra*, *Ashmead*, Ins. 205  
*Ophioplinthaca*, *Verrill*, Ech. 125  
*Opiellus*, *Ashmead*, Ins. 210  
*Opisoxestus*, *Ashmead*, Ins. 205  
*Opisthognomus*, *Lühke*, Verm. 44  
*Oppenheimia*, *Cossmann*, Ech. 101  
*Orania*, *Pallary*, Moll. 73  
*Orchidasma*, *Looss*, Verm. 44  
*Oreba*, *Cameron*, Ins. 210  
*Oresimus*, *Ashmead*, Ins. 210  
*Oreusa*, *Bernhauer*, Ins. 128  
*Orgilomorpha*, *Ashmead*, Ins. 210  
*Orgiloneura*, *Ashmead*, Ins. 210  
*Ornithodes*, *Coquillett*, Ins. 300  
*Orobitella*, *Dall*, Moll. 88  
*Orodaliscus*, *Reitter*, Ins. 140  
*Orotrechosoma*, *Verhoeff*, Myriop. 7  
*Orthopidea*, *Reuter*, Ins. 324  
*Orothreptes*, *Perkins*, Ins. 169  
*Orthrus*, *Simon*, Arachn. 26  
*Osrhoes*, *Druce*, Ins. 246  
*Ossiania*, *Monterosato*, Moll. 70  
*Otakia*, *Jordan and Snyder*, Pisces 26  
*Otantestia*, *Breddie*, Ins. 317

- Othniocryptus, *Sharp*, Ins. 136  
 Otophryne, *Boulenger*, Rept. 28  
 Ototreta, *Olivier*, Ins. 157  
 Otumba, *Morse*, Ins. 353  
 Oudardia, *Monterosato*, Moll. 84  
 Ovalisia, *Kerremans*, Ins. 148  
 Ovipennis, *Hampson*, Ins. 246  
 Oxsenanus, *Swinhoe*, Ins. 259  
 Oxynotus, *Hancock*, Ins. 353  
 Oxyntes, *Godman*, Ins. 232  
 Oxyrhombus, *Crosse and Fischer*,  
     Moll. 80  
 Oxyserica, *Brenske*, Ins. 142  
 Oxythres, *Druce*, Ins. 259
- Pachyanodon, *Martens*, Moll. 88  
 Pachyballus, *Simon*, Arachn. 26  
 Pachycerosia, *Hampson*, Ins. 246  
 Pachycolpura, *Bredden*, Ins. 320  
 Pachynaia, *Crosse and Fischer*,  
     Moll. 88  
 Pachyosmia, *Ducke*, Ins. 191  
 Pachypalpia, *Warren*, Ins. 271  
 Pachyperna, *Oppenheim*, Moll. 91  
 Padangia, *Babor*, Moll. 67  
 Pagodula, *Monterosato*, Moll. 73  
 Pagurodactylus, *Gorham*, Ins. 157  
 Palada, *Smith*, Ins. 259  
 Palæobolus, *Matthew*, Brach. 6  
 Palæochirogaleus, *Grandidier*,  
     Mamm. 23  
 Palæocollonia, *Küttl*, Moll. 81  
 Palæoheteroptera, *Meunier*, Ins. 115  
 Palæonepidoides, *Meunier*, Ins. 115  
 Palæopedina, *Lambert*, Ech. 101  
 Palæophiomyxa, *Stuertz*, Ech. 127  
 Palæopropithecus, *Grandidier*,  
     Mamm. 23  
 Palæosia, *Hampson*, Ins. 246  
 Palæosiccia, *Hampson*, Ins. 246  
 Palæosolaster, *Stuertz*, Ech. 116  
 Palæospondylus, *Stuertz*, Ech. 127  
 Palæosynapha, *Meunier*, Ins. 115  
     and 297  
 Palaia, *Shipley*, Verm. 41  
 Palimbola, *Weise*, Ins. 182  
 Palinnotus, *Stebbing*, Crust. 39  
 Palliolium, *Monterosato*, Moll. 91  
 Pambolidea, *Ashmead*, Ins. 210  
 Panachræsta, *Simon*, Arachn. 26  
 Pandisus, *Simon*, Arachn. 26  
 Panoplites, *Theobald*, Ins. 298  
 Papias, *Godman*, Ins. 232  
 Parablavia, *Hampson*, Ins. 246  
 Paracarystus, *Godman*, Ins. 232  
 Paracladiscites, *Mojsisovics*, Moll. 55  
 Paracochloceras, *Mojsisovics*, Moll. 55  
 Paracomaris, *Karsch*, Ins. 353  
 Paracremastus, *Szépligeti*, Ins. 205  
 Paracrostoma, *Cossmann*, Moll. 76  
 Paracypridopsis, *Kaufmann*, Crust.  
     45  
 Paradiscosoma, *Carlgrén*, Cœl. 18  
 Paradora, *Kerremans*, Ins. 148  
 Paradyschiria, *Speiser*, Ins. 312  
 Paraecophylus, *Ashmead*, Ins. 210  
 Paragylla, *Hampson*, Ins. 246  
 Paraides, *Godman*, Ins. 232  
 Parajuvavites, *Mojsisovics*, Moll. 55  
 Paralegoceras, *Hyatt*, Moll. 55  
 Paralitargus, *Casey*, Ins. 137  
 Parallage, *Warren*, Ins. 271  
 Paralygia, *Warren*, Ins. 272  
 Paramenestheus, *Bredden*, Ins. 317  
 Paramixia, *Reuter*, Ins. 324  
 Paramulona, *Hampson*, Ins. 246  
 Paranobium, *Gahan*, Ins. 159  
 Paranoites, *Tschitscherine*, Ins. 121  
 Paranotius, *Bredden*, Ins. 317  
 Paranovelsis, *Casey*, Ins. 188  
 Parapanteles, *Ashmead*, Ins. 210  
 Parapomachilius, *Schwarz*, Ins. 153  
 Pararcestes, *Mojsisovics*, Moll. 55  
 Parascoclex, *Michaelsen*, Verm. 33  
 Parasiccia, *Hampson*, Ins. 246  
 Parastephanops, *Cambridge*, Arachn.  
     27  
 Parastilbe, *Cossmann*, Moll. 74  
 Parasynema, *Cambridge*, Arachn. 27  
 Parasyntormon, *Wheeler*, Ins. 304  
 Parathisbites, *Mojsisovics*, Moll. 55  
 Paratibetites, *Mojsisovics*, Moll. 55  
 Paratissa, *Coquillett*, Ins. 310  
 Paratobias, *Cambridge*, Arachn. 27  
 Paratriphleps, *Champion*, Ins. 323  
 Paratrochus, *Küttl*, Moll. 81  
 Paratropites, *Mojsisovics*, Moll. 55  
 Paratrytone, *Godman*, Ins. 232  
 Parautolytus, *Ehlers*, Verm. 27  
 Parbokla, *Swinhoe*, Ins. 281  
 Pardalina, *Jousseaume*, Moll. 73  
 Parecatus, *Fairmaire*, Ins. 162  
 Paremonia, *Hampson*, Ins. 246  
 Parencyrtus, *Ashmead*, Ins. 214  
 Pareugoa, *Hampson*, Ins. 246  
 Pareulepis, *Durboux*, Verm. 27  
 Paridotea, *Stebbing*, Crust. 38  
 Parilendus, *Casey*, Ins. 137  
 Parisanopus, *Brèthes*, Ins. 128  
 Parisiella, *Cossmann*, Moll. 88  
 Parodiceras, *Hyatt*, Moll. 55  
 Parodius, *Distant*, Ins. 317  
 Paroedopa, *Coquillett*, Ins. 310  
 Paronia, *Diamare*, Verm. 41  
 Paropsonema, *Clarke*, Ech. 153

- Parora*, *Smith*, Ins. 259  
*Paroudablia*, *Cockerell*, Ins. 335  
*Parphorus*, *Godman*, Ins. 232  
*Parthenoserica*, *Brenske*, Ins. 142  
*Parudea*, *Swinhoe*, Ins. 281  
*Parvicardium*, *Monterosato*, Moll. 83  
*Parvivenus*, *Sacco*, Moll. 84  
*Passadena*, *Hulst*, Ins. 281  
*Pasteosia*, *Hampson*, Ins. 246  
*Paulotropites*, *Mojnissovics*, Moll. 55  
*Paurophleps*, *Hampson*, Ins. 246  
*Paurostauria*, *Kirby*, Ins. 327  
*Paurotarsus*, *Hancock*, Ins. 353  
*Pectinidiscus*, *Ludwig*, Ech. 116  
*Pedois*, *Turner*, Ins. 291  
*Pegias*, *Simpson*, Moll. 89  
*Pelorinus*, *Vauloger*, Ins. 162  
*Pentactinia*, *Carlgrén*, Coel. 19  
*Pentameroceras*, *Hyatt*, Moll. 58  
*Peplometus*, *Simon*, Arachn. 27  
*Perimeles*, *Godman*, Ins. 232  
*Periphyllopsis*, *Vanhöffen*, Coel. 14  
*Peripleurites*, *Mojnissovics*, Moll. 55  
*Perissopneumon*, *Newstead*, Ins. 335  
*Perissospiza*, *Oberholser*, Aves 60  
*Peritornenta*, *Turner*, Ins. 292  
*Perlinella*, *Banks*, Ins. 340  
*Permocidaris*, *Lambert*, Ech. 102  
*Peronidia*, *Dall*, Moll. 84  
*Perula*, *Mabille*, Ins. 281  
*Pexinola*, *Hampson*, Ins. 246  
*Phacoceras*, *Hyatt*, Moll. 58  
*Phæaciis*, *Simon*, Arachn. 27  
*Phæcadophora*, *Walsingham*, Ins. 286  
*Phæophlebosia*, *Hampson*, Ins. 247  
*Phæosia*, *Hampson*, Ins. 247  
*Phalacrechinus*, *Lambert*, Ech. 102  
*Phalacropodina*, *Lambert*, Ech. 102  
*Phanerotonella*, *Szépligeti*, Ins. 210  
*Phania*, *Godman*, Ins. 232  
*Pharciceras*, *Hyatt*, Moll. 55  
*Phaudopsis*, *Hampson*, Ins. 247  
*Phaulosia*, *Hampson*, Ins. 247  
*Phaulostathma*, *Warren*, Ins. 272  
*Phenacapsis*, *Cockerell*, Ins. 335  
*Pheræus*, *Godman*, Ins. 232  
*Pherenice*, *Thorell*, Arachn. 27  
*Philacelota*, *Heller*, Ins. 142  
*Philates*, *Simon*, Arachn. 27  
*Philbertia*, *Monterosato*, Moll. 72  
*Philhedonius*, *Gorham*, Ins. 157  
*Philonesia*, *Sykes*, Moll. 60  
*Phloioceras*, *Hyatt*, Moll. 58  
*Pholia*, *Reichenow*, Aves 50  
*Phorastes*, *Kirkaldy*, Ins. 322  
*Phormedites*, *Mojnissovics*, Moll. 55  
*Phoronastes*, *Kirkaldy*, Ins. 320  
*Phractura*, *Boulenger*, Pisces 25  
*Phrealcia*, *Chrétien*, Ins. 292  
*Phreatoicoides*, *Sayce*, Crust. 38  
*Phylidea*, *Reuter*, Ins. 324  
*Phyllodina*, *Dall*, Moll. 84  
*Phyllonaias*, *Crosse and Fischer*, Moll. 89  
*Phylloserica*, *Brenske*, Ins. 142  
*Physunio*, *Simpson*, Moll. 89  
*Piccarda*, *Grote*, Ins. 222  
*Pilea*, *Simpson*, Moll. 89  
*Pilsbrycoconcha*, *Simpson*, Moll. 89  
*Pimploteris*, *Ashmead*, Ins. 206  
*Pisena*, *Horváth*, Ins. 317  
*Pisenus*, *Casey*, Ins. 163  
*Pithecodon*, *Lorenz-Liburnau*, Mamm. 24  
*Placocharis*, *Pilsbry*, Moll. 65  
*Placodidus*, *Péringuey*, Ins. 145  
*Plæsioserica*, *Brenske*, Ins. 142  
*Plagiocardium*, *Cossmann*, Moll. 83  
*Plagochilus*, *Wasmann*, Ins. 145  
*Plagiopalus*, *Simon*, Arachn. 27  
*Plagioplatys*, *Tschitschérine*, Ins. 122  
*Plagiotrypes*, *Ashmead*, Ins. 206  
*Planikellia*, *Cossmann*, Moll. 89  
*Planimodiola*, *Cossmann*, Moll. 91  
*Platoberus*, *Sharp*, Ins. 136  
*Platybracon*, *Szépligeti*, Ins. 210  
*Platyclymenia*, *Hyatt*, Moll. 55  
*Platycenia*, *Vaughan*, Coel. 23  
*Platycolpus*, *Donald*, Moll. 74  
*Platydonax*, *Dall*, Moll. 84  
*Platylistrum*, *Schulze*, Spong. 37  
*Platymyrmilla*, *André*, Ins. 195  
*Platypepla*, *Warren*, Ins. 272  
*Platythorus*, *Morse*, Ins. 353  
*Plectoceras*, *Hyatt*, Moll. 58  
*Plectronia*, *Hinde*, Spong. 26  
*Plectronotus*, *Morse*, Ins. 353  
*Plesiobuthus*, *Pocock*, Arachn. 16  
*Plesiochactas*, *Pocock*, Arachn. 16  
*Plethobasus*, *Simpson*, Moll. 89  
*Pletholophus*, *Simpson*, Moll. 89  
*Pleurarmadillidium*, *Verhoeff*, Crust. 37  
*Pleurobranchopsis*, *Verrill*, Moll. 70  
*Pleuroneurophion*, *Ashmead*, Ins. 206  
*Pliocathaica*, *Andreae*, Moll. 64  
*Plochiocoris*, *Champion*, Ins. 323  
*Ploneta*, *Snellen*, Ins. 247  
*Plotopuserica*, *Brenske*, Ins. 142  
*Plusioserica*, *Brenske*, Ins. 142  
*Poanopsis*, *Godman*, Ins. 232  
*Podiasa*, *Buick*, Ins. 292  
*Podismopsis*, *Zubovskiy*, Ins. 353  
*Pocilonola*, *Hampson*, Ins. 247

- Pogonarthron*, *Semenov*, Ins. 175  
*Pogonogya*, *Warren*, Ins. 272  
*Poliodule*, *Hampson*, Ins. 247  
*Poliosia*, *Hampson*, Ins. 247  
*Polititapes*, *Chiamenti*, Moll. 84  
*Polyangæus*, *Doane*, Ins. 300  
*Polylobarthron*, *Semenov*, Ins. 175  
*Polymniella*, *Verrill*, Verm. 28  
*Polycellaria*, *Imhof*, Ins. 332  
*Polysphinctomorpha*, *Ashmead*, Ins. 206  
*Pomachilioides*, *Schwarz*, Ins. 153  
*Pomelia*, *Loriol*, Ech. 104  
*Ponyalis*, *Fairmaire*, Ins. 157  
*Popanoceras*, *Hyatt*, Moll. 55  
*Porcupinia*, *Cossmann*, Moll. 81  
*Potamyia*, *Banks*, Ins. 337  
*Poweria*, *Monterosato*, Moll. 73  
*Prasinochrysa*, *Warren*, Ins. 272  
*Premnodrilus*, *Smith*, Verm. 33  
*Prepiella*, *Hampson*, Ins. 247  
*Pressodonta*, *Simpson*, Moll. 89  
*Preussiella*, *Michaelsen*, Verm. 33  
*Prionoceras*, *Hyatt*, Moll. 55  
*Prionocompastes*, *Breddin*, Ins. 317  
*Prismodictya*, *Hall and Clarke*, Spong. 30  
*Pristaulacus*, *Kieffer*, Ins. 211  
*Pristigloma*, *Dall*, Moll. 92  
*Pristomeridia*, *Ashmead*, Ins. 206  
*Pristopera*, *Swinhoe*, Ins. 272  
*Proarcestes*, *Mojisovics*, Moll. 56  
*Probolosternus*, *Lewis*, Ins. 133  
*Procanthia*, *Hampson*, Ins. 247  
*Procopius*, *Thorell*, Arachn. 28  
*Procridia*, *Hampson*, Ins. 248  
*Procrimima*, *Hampson*, Ins. 248  
*Proernus*, *Simon*, Arachn. 28  
*Promalacoclemmys*, *Reinach*, Rept. 23  
*Pronola*, *Hampson*, Ins. 248  
*Pronotacanthus*, *Woodward*, Pisces 22  
*Propedesis*, *Walsingham*, Ins. 286  
*Prophymosoma*, *Lambert*, Ech. 77 and Vermes, p. 22  
*Prosopodectes*, *Canestrini*, Arachn. 37  
*Prospasta*, *Warren*, Ins. 272  
*Prosthaptus*, *Gorham*, Ins. 157  
*Prothidius*, *Ashmead*, Ins. 210  
*Proteodidelphys*, *Ameghino*, Mamm. 36  
*Protethmos*, *Gregory*, Cæl. 23  
*Protocyamus*, *Gregory*, Ech. 104  
*Protoindris*, *Lorenz-Liburnau*, Mamm. 24  
*Protomicropplitis*, *Ashmead*, Ins. 210  
*Protopalysthea*, *Verrill*, Cæl. 20  
*Protosia*, *Hampson*, Ins. 248  
*Protoskiosa*, *Bernhauer*, Ins. 128  
*Protosmia*, *Ducke*, Ins. 191  
*Protothelepus*, *Verrill*, Verm. 28  
*Protrachyceras*, *Mojisovics*, Moll. 56  
*Proutia*, *Chapman*, Ins. 248  
*Provancheria*, *Ashmead*, Ins. 210  
*Psammacoma*, *Dall*, Moll. 84  
*Psammodonax*, *Cossmann*, Moll. 84  
*Psammoica*, *Dall*, Moll. 84  
*Psammotæna*, *Dall*, Moll. 85  
*Psammotreta*, *Dall*, Moll. 85  
*Psecadia*, *Weise*, Ins. 183  
*Pseudoserica*, *Brenke*, Ins. 142  
*Pseliocras*, *Hyatt*, Moll. 58  
*Psepholacipus*, *Lea*, Ins. 169  
*Pseudægus*, *Heller*, Ins. 139  
*Pseudamblyteles*, *Ashmead*, Ins. 206  
*Pseudantalis*, *Monterosato*, Moll. 82  
*Pseudapis*, *Kirby*, Ins. 195  
*Pseudapistocalamus*, *Lönnberg*, Rept. 22  
*Pseudaristus*, *Reitter*, Ins. 122  
*Pseudavicula*, *Simpson*, Moll. 89  
*Pseudencyrtus*, *Ashmead*, Ins. 214  
*Pseudhenoticus*, *Sharp*, Ins. 136  
*Pseudeugalta*, *Ashmead*, Ins. 206  
*Pseudhormomyia*, *Kieffer*, Ins. 296  
*Pseudischnaspia*, *Hempel*, Ins. 335  
*Pseudobaphia*, *Simpson*, Moll. 89  
*Pseudocaprima*, *Walsingham*, Ins. 292  
*Pseudocleobis*, *Pocock*, Arachn. 32  
*Pseudoclytia*, *Mayer*, Cæl. 11  
*Pseudocochlearia*, *Cossmann*, Moll. 76  
*Pseudocolotes*, *Abeille*, Ins. 157  
*Pseudodiptera*, *Pic*, Ins. 175  
*Pseudofusus*, *Monterosato*, Moll. 73  
*Pseudognophos*, *Staudinger*, Ins. 272  
*Pseudokingena*, *Böse and Schlosser*, Brach. 6  
*Pseudolestes*, *Kirby*, Ins. 342  
*Pseudomelampus*, *Pallary*, Moll. 68  
*Pseudomesalia*, *Ganglbauer*, Ins. 138  
*Pseudometaxia*, *Jacoby*, Ins. 183  
*Pseudomutela*, *Simpson*, Moll. 89  
*Pseudonica*, *Kirby*, Ins. 226  
*Pseudon*, *Simpson*, Moll. 89  
*Pseudopalasterina*, *Stuert*, Ech. 117  
*Pseudopidonia*, *Pic*, Ins. 176  
*Pseudorbis*, *Monterosato*, Moll. 76  
*Pseudoripersia*, *Cockerell*, Ins. 335  
*Pseudorissaina*, *Tate and May*, Moll. 79  
*Pseudoscaphirhynchus*, *Nikolski*, Pisces 30  
*Pseudosasyllus*, *Grouvelle*, Ins. 135

- Pseudospatha*, *Simpson*, Moll. 89  
*Pseudotherebus*, *Lea*, Ins. 169  
*Pseudothyrtodius*, *Loomis*, Pisces 29  
*Pseudotortrix*, *Turner*, Ins. 292  
*Pseudoxenicus*, *Finsch*, Aves 52  
*Psiloadiscites*, *Mojsisovics*, Moll. 56  
*Psilonothus*, *Sloane*, Ins. 122  
*Psocathropos*, *Ribaga*, Ins. 339  
*Psocinella*, *Banks*, 339  
*Psoronaias*, *Crosse and Fischer*, Moll. 89  
*Psyllæphagus*, *Ashmead*, Ins. 214  
*Psylo*, *Thorell*, Arachn. 28  
*Pterochæta*, *Holland*, Ins. 260  
*Pteroma*, *Staudinger*, Ins. 248  
*Pteronarcella*, *Banks*, Ins. 340  
*Ptilomyia*, *Coquillett*, Ins. 310  
*Ptiloneura*, *Enderlein*, Ins. 339  
*Ptilopocus*, *Enderlein*, Ins. 339  
*Ptycharcestes*, *Mojsisovics*, Moll. 56  
*Ptychobranchius*, *Simpson*, Moll. 89  
*Ptychoderma*, *Simpson*, Moll. 89  
*Ptychogonimus*, *Lühe*, Verm. 44  
*Ptychorhynchus*, *Simpson*, Moll. 89  
*Ptychorrhoe*, *Warren*, Ins. 273  
*Ptyssoceras*, *Hyatt*, Moll. 58  
*Pupopsis*, *Sturany*, Moll. 66  
*Puranius*, *Germain*, Ins. 169  
*Pusillina*, *Monterosato*, Moll. 76  
*Pustulifer*, *Cossmann*, Moll. 74  
*Pycnogeusteria*, *Gorham*, Ins. 185  
*Pycnophion*, *Ashmead*, Ins. 206  
*Pyrgisculus*, *Monterosato*, Moll. 79  
*Pyrgodomus*, *Crosse and Fischer*, Moll. 81  
*Pyrgolidium*, *Monterosato*, Moll. 79  
*Pyrgostelis*, *Monterosato*, Moll. 79  
*Pyrgostylus*, *Monterosato*, Moll. 79  
*Pyrospongia*, *Zahálka*, Spong. 35  
  
*Racheolopha*, *Warren*, Ins. 273  
*Racovitzia*, *Dollo*, Pisces 20  
*Radiatula*, *Simpson*, Moll. 89  
*Ragana*, *Swinhoe*, Ins. 260  
*Ragonotia*, *Staudinger*, Ins. 260  
*Randomia*, *Matthew*, Moll. 82  
*Raphidospora*, *Léger*, Prot. 26  
*Rathora*, *Moore*, Ins. 226  
*Rebelia*, *Heylaerts*, Ins. 248  
*Rectidens*, *Simpson*, Moll. 89  
*Rectipalpula*, *Joannia*, Ins. 261  
*Rema*, *Swinhoe*, Ins. 261  
*Renocera*, *Hendel*, Ins. 310  
*Reteporidra*, *Nickles and Bassler*, Bry. 5  
*Rhabdosispongia*, *Hall and Clarke*, Spong. 31  
*Rhadinotænia*, *Kraatz*, Ins. 145  
  
*Rhaphidochila*, *Kerremans*, Ins. 148  
*Rhectopsammia*, *Vaughan*, Cæl. 23  
*Rhegma*, *Jordan and Evermann*, Pisces 18  
*Rhinocoryne*, *Martens*, Moll. 74  
*Rhinthon*, *Godman*, Ins. 232  
*Rhizodrilus*, *Smith*, Verm. 33  
*Rhizomyia*, *Kieffer*, Ins. 296  
*Rhodographa*, *Hampson*, Ins. 248  
*Rhombocladia*, *Rogers*, Bry. 6  
*Rhomboidella*, *Monterosato*, Moll. 91  
*Rhopalomastix*, *Forel*, Ins. 200  
*Rhyncholobus*, *Gahan*, Ins. 170  
*Rhynchothyreus*, *Ashmead*, Ins. 206  
*Rhynchotmetus*, *Horváth*, Ins. 318  
*Rhyssomorphus*, *Fairmaire*, Ins. 140  
*Rhytidothorax*, *Ashmead*, Ins. 214  
*Ringiculina*, *Monterosato*, Moll. 70  
*Rizoceras*, *Hyatt*, Moll. 58  
*Roemerispongia*, *Hall and Clarke*, Spong. 32  
*Rogmocrypta*, *Simon*, Arachn. 28  
*Rombergia*, *Dall*, Moll. 85  
*Rothembuhleria*, *Verhoeff*, Myriop. 9  
*Roxamella*, *Monterosato*, Moll. 70  
*Ruditapes*, *Chiamenti*, Moll. 85  
*Rugifera*, *Simpson*, Moll. 89  
  
*Saccodomus*, *Rainbow*, Arachn. 28  
*Sacseurus*, *Bredlin*, Ins. 318  
*Sactoceras*, *Hyatt*, Moll. 58  
*Sactopus*, *Ashmead*, Ins. 211  
*Saissetia*, *Ancey*, Moll. 62  
*Salebius*, *Casey*, Ins. 136  
*Salinator*, *Hedley*, Moll. 68  
*Samboides*, *Kerremans*, Ins. 149  
*Samla*, *Bergh*, Moll. 69  
*Sandhergeoceras*, *Hyatt*, Moll. 56  
*Sanglingites*, *Mojsisovics*, Moll. 56  
*Saragossa*, *Staudinger*, Ins. 261  
*Sarasota*, *Hulst*, Ins. 282  
*Sasonichus*, *Pocock*, Arachn. 28  
*Sauracris*, *Burr*, Ins. 354  
*Scaphiomicrus*, *Casey*, Ins. 132  
*Scelorthus*, *Busck*, Ins. 292  
*Schafferia*, *Abelson*, Ins. 345  
*Schaudinna*, *Schulze*, Spong. 27  
*Schauinslandia*, *Ashmead*, Ins. 211  
*Schistoceras*, *Hyatt*, Moll. 56  
*Schistotænia*, *Cohn*, Verm. 41  
*Schisturella*, *Norman*, Crust. 39  
*Schizothemis*, *Sjöstedt*, Ins. 342  
*Schlettererius*, *Ashmead*, Ins. 211  
*Schmardaella*, *Michaelsen*, Verm. 33  
*Sciassula*, *Dall*, Moll. 85  
*Scodionvz*, *Staudinger*, Ins. 272  
*Scodion*

- Scoliopisthen, *Hartmann*, Ins. 170  
 Scopocira, *Simon*, Arachn. 28  
 Scotobleps, *Boulenger*, Rept. 27  
 Scotomphales, *Vachal*, Ins. 196  
 Scotoscymnus, *Weise*, Ins. 186  
 Scrobiculina, *Dall*, Moll. 85  
 Scyphidium, *Schulze*, Spong. 27  
 Segenina, *Chapman*, Prot. 21  
 Selicania, *Smith*, Ins. 261  
 Selysioneura, *Förster*, Ins. 342  
 Sematethmos, *Gregory*, Cœl. 23  
 Semelina, *Dall*, Moll. 85  
 Semimodiola, *Cossmann*, Moll. 91  
 Semnornia, *Richmond*, Aves. 46  
 Sepsisoma, *Johnson*, Ins. 311  
 Septameroceras, *Hyatt*, Moll. 58  
 Sewa, *Swinhoe*, Ins. 273  
 Shistodesmus, *Simpson*, Moll. 90  
 Sibyllites, *Mojsisovics*, Moll. 56  
 Silabraxas, *Swinhoe*, Ins. 274  
 Silacida, *Semper*, Ins. 261  
 Sillus, *Cambridge*, Arachn. 29  
 Silurnus, *Weise*, Ins. 184  
 Simonaias, *Crosse and Fischer*, Moll. 90  
 Siphonocyclus, *Moellendorff*, Moll. 78  
 Sirenites, *Mojsisovics*, Moll. 56  
 Sirius, *Hedley*, Moll. 74  
 Sirodes, *Schäffer*, Ins. 345  
 Sitalia, *Lewis*, Ins. 133  
 Skorpiastes, *Lucas*, Ins. 274  
 Sminthurides, *Börner*, Ins. 345  
 Smithia, *Monterosato*, Moll. 72  
 Solenoceras, *Hyatt*, Moll. 58  
 Solenococcus, *Cockerell*, Ins. 336  
 Soliusa, *Casey*, Ins. 128  
 Somphospongia, *Beede*, Spong. 25  
 Sonorella, *Pilsbry*, Moll. 64  
 Sorglana, *Kirkaldy*, Ins. 322  
 Spanolarra, *Cameron*, Ins. 196  
 Spathodus, *Boulenger*, Pisces 23  
 Spathopsis, *Simpson*, Moll. 90  
 Spectrophysa, *Swinhoe*, Ins. 261  
 Sphaerodictya, *Hall and Clarke*, Spong. 33  
 Sphenonaias, *Crosse and Fischer*, Moll. 90  
 Sphyradoceras, *Hyatt*, Moll. 58  
 Spilorhombus, *Raffray*, Ins. 131  
 Spiralina, *Chaster*, Moll. 79  
 Spiratropis, *Kobelt and Moellendorff*, Moll. 78  
 Spiropoma, *Kobelt and Moellendorff*, Moll. 78  
 Spixiconcha, *Pilsbry*, Moll. 90  
 Spongelites, *Rothpletz*, Spong. 53  
 Sponsorinus, *Fairmaire*, Ins. 149  
 Sporadoceras, *Hyatt*, Moll. 56  
 Spyroceras, *Hyatt*, Moll. 58  
 Stadna, *Swinhoe*, Ins. 261  
 Staga, *Mabille*, Ins. 261  
 Staliastes, *Kirkaldy*, Ins. 322  
 Staurodiscus, *Neviani*, Prot. 24  
 Stauronereis, *Verrill*, Verm. 28  
 Steeriana, *Jousseauume*, Moll. 66  
 Stegotheca, *Warren*, Ins. 274  
 Steinmannites, *Mojsisovics*, Moll. 56  
 Stenaphorura, *Absolon*, Ins. 345  
 Stenarcha, *Hampson*, Ins. 249  
 Stenaulis, *Hampson*, Ins. 249  
 Stenacula, *Snellen*, Ins. 282  
 Stenocopsis, *Warren*, Ins. 282  
 Stenodeza, *Simon*, Arachn. 29  
 Stenodina, *Simon*, Arachn. 29  
 Stenomicra, *Coquillett*, Ins. 311  
 Stenopla, *Warren*, Ins. 274  
 Stenopus, *Schwarz*, Ins. 154  
 Stenorrhœ, *Warren*, Ins. 274  
 Stenoscapta, *Hampson*, Ins. 249  
 Stenosia, *Hampson*, Ins. 249  
 Stenotarsoidea, *Ceiki*, Ins. 185  
 Stephanochasmus, *Looss*, Verm. 45  
 Stephanocosmia, *Cossmann*, Moll. 74  
 Stephanomorpha, *Vaughan*, Cœl. 23  
 Stephanopachys, *Waterhouse*, Ins. 160  
 Stephanopsis, *Lambert*, Ech. 108  
 Sterechinus, *Koehler*, Ech. 108  
 Steriphonotrochus, *Vaughan*, Cœl. 23  
 Stictane, *Hampson*, Ins. 249  
 Stictosia, *Hampson*, Ins. 249  
 Stigmatococcus, *Hempel*, Ins. 336  
 Stigmatoteuthis, *Pfeffer*, Moll. 53  
 Stipator, *Rehn*, Ins. 351  
 Stolleya, *Schrammen*, Spong. 39  
 Stomylotrema, *Looss*, Verm. 45  
 Storenosoma, *Hogg*, Arachn. 29  
 Stratiadrilus, *Haswell*, Verm. 29  
 Streneoderma, *Blackburn*, Ins. 171  
 Strobliella, *Kieffer*, Ins. 296  
 Stroboceras, *Hyatt*, Moll. 58  
 Stronachlachar, *Kirkaldy*, Ins. 318  
 Strongylopora, *Maplestone*, Bry. 8  
 Strongylopsalis, *Burr*, Ins. 347  
 Strophiceras, *Hyatt*, Moll. 58  
 Stutchburia, *Etheridge*, Moll. 90  
 Styganodon, *Martens*, Moll. 90  
 Styrites, *Mojsisovics*, Moll. 56  
 Suborbiculus, *Simpson*, Moll. 90  
 Subularia, *Monterosato*, Moll. 80  
 Sybrinus, *Gahan*, Ins. 176  
 Sylora, *Swinhoe*, Ins. 283  
 Symplectoteuthis, *Pfeffer*, Moll. 53  
 Sympolemon, *Wasmann*, Ins. 129

- Synactinomyxon, *Stolc*, Prot. 26  
 Synaphia, *Pagenstecher*, Ins. 294  
 Synclavella, *Caullery*, Tun. 5  
 Syngamoneura, *Mabille*, Ins. 286  
 Synsyllia, *Verrill*, Verm. 29  
 Syntarucus, *Butler*, Ins. 229  
 Syntegmodus, *Loomis*, Pisces 28  
 Syntomimorpha, *Hampson*, Ins. 249  
 Syntomopteryx, *Kraatz*, Ins. 145  
 Synxenus, *Silvestri*, Myriop. 9  
 Syroloma, *Simon*, Arachn. 30  
 Syrphophagus, *Ashmead*, Ins. 214  
 Systolomorpha, *Ashmead*, Ins. 214  
  
 Tabula, *Fleutiaux*, Ins. 154  
 Tachycolpura, *Breddin*, Ins. 320  
 Tainoceras, *Hyatt*, Moll. 58  
 Tamnoseric, *Brenske*, Ins. 142  
 Tamolia, *Horváth*, Ins. 318  
 Tanaognathus, *Wolcott*, Arachn. 38  
 Tangla, *Swinhoe*, Ins. 283  
 Taonidium, *Pfeffer*, Moll. 53  
 Tapinelytrum, *Heller*, Ins. 170  
 Taraxineura, *Warren*, Ins. 274  
 Tarsostenodes, *Blackburn*, Ins. 159  
 Tasinanica, *Lea*, Ins. 170  
 Taurotapes, *Sacco*, Moll. 85  
 Tectococcus, *Hempel*, Ins. 336  
 Tectopulvinaria, *Hempel*, Ins. 336  
 Teleonychoteuthis, *Pfeffer*, Moll. 53  
 Telles, *Godman*, Ins. 232  
 Telmatettix, *Burr*, Ins. 354  
 Telmatoscus, *Sharp*, Ins. 136  
 Telotheta, *Warren*, Ins. 274  
 Tenagomyia, *Thomson*, Crust. 36  
 Termitoxenia, *Wasmann*, Ins. 306  
 Terobiella, *Ashmead*, Ins. 214  
 Tetracannota, *Mayer*, Cœl. 12  
 Tetracnemopsis, *Ashmead*, Ins. 214  
 Tetralophidea, *Ashmead*, Ins. 214  
 Tetralophiellus, *Ashmead*, Ins. 214  
 Tetrameroceras, *Hyatt*, Moll. 58  
 Tetraodontonyx, *Ashmead*, Ins. 196  
 Tetraspis, *Hagenmüller*, Moll. 61  
 Tetronychoteuthis, *Pfeffer*, Moll. 53  
 Tetticerus, *Hancock*, Ins. 354  
 Textivenus, *Cossmann*, Moll. 85  
 Thalattodora, *Perkins*, Ins. 170  
 Thalerocnemis, *Lohde*, Ins. 159  
 Thargella, *Godman*, Ins. 233  
 Thaumaspis, *Bolívar*, Ins. 351  
 Thaumatopealtria, *Kirkaldy*, Ins. 331  
 Thaumostochirus, *Hartmann*, Ins. 170  
 Thecocarpus, *Nutting*, Cœl. 12  
 Theila, *Swinhoe*, Ins. 283  
  
 Thelidoteuthis, *Pfeffer*, Moll. 53  
 Therebiosoma, *Lea*, Ins. 170  
 Thermeola, *Hampson*, Ins. 250  
 Therpis, *Weise*, Ins. 184  
 Thespieus, *Godman*, Ins. 233  
 Thetidites, *Mojsisovics*, Moll. 56  
 Thiodina, *Simon*, Arachn. 31  
 Thisbites, *Mojsisovics*, Moll. 56  
 Thliptocnemis, *Mabille*, Ins. 250  
 Thoon, *Godman*, Ins. 233  
 Thraciopsis, *Tate and May*, Moll. 83  
 Thrausmus, *Buysson*, Ins. 192  
 Threnosia, *Hampson*, Ins. 250  
 Thrimolus, *Casey*, Ins. 137  
 Thryptodus, *Loomis*, Pisces 28  
 Thyrsopocus, *Enderlein*, Ins. 339  
 Thysanodictya, *Hall and Clarke*, Spong. 31  
 Tiberiola, *Cossmann*, Moll. 80  
 Tibetites, *Mojsisovics*, Moll. 56  
 Tigrasis, *Godman*, Ins. 233  
 Tilargus, *Casey*, Ins. 137  
 Tilgida, *Cameron*, Ins. 206  
 Tinemyia, *Hutton*, Ins. 300  
 Tineophoctonus, *Ashmead*, Ins. 215  
 Tiryntia, *Godman*, Ins. 233  
 Tisactia, *Casey*, Ins. 136  
 Titanoceras, *Hyatt*, Moll. 58  
 Tivelina, *Cossmann*, Moll. 85  
 Tolmerus, *Fairmaire*, Ins. 163  
 Tomocerura, *Wahlgren*, Ins. 345  
 Tomocyrra, *Simon*, Anachn. 31  
 Tomodactylus, *Günther*, Rept. 28  
 Tomopeas, *Miller*, Mamm. 25  
 Tonga, *Kirkaldy*, Ins. 328  
 Tongorina, *Kirkaldy*, Ins. 320  
 Tornacantia, *Smith*, Ins. 262  
 Tornoceras, *Hyatt*, Moll. 56  
 Tortricosia, *Hampson*, Ins. 250  
 Tosquinetia, *Ashmead*, Ins. 206  
 Toxocampellus, *Breddin*, Ins. 323  
 Toxoderus, *Fauvel*, Ins. 129  
 Trabecula, *Monterosato*, Moll. 80  
 Trachelocyphus, *Tschitscherine*, Ins. 122  
 Trachypleura, *Jaekel*, Moll. 92  
 Trachyserica, *Brenske*, Ins. 142  
 Traginops, *Coquillett*, Ins. 311  
 Tragogomphus, *Sjöstedt*, Ins. 343  
 Tragula, *Monterosato*, Moll. 80  
 Trapezoideus, *Simpson*, Moll. 80  
 Trentonaster, *Stuertz*, Ech. 119  
 Tretocalia, *Hinde*, Spong. 26  
 Tretocalyx, *Schulze*, Spong. 35  
 Trevorina, *Ashmead*, Ins. 206  
 Triactinomyxon, *Stolc*, Prot. 26  
 Triainor-                    *Stolc*, Moll. 56

- Tricentra, *Warren*, Ins. 275  
 Trichasterina, *Schulze*, Spong. 27  
 Trichobatrachus, *Boulenger*, Rept. 27.  
 Trichobius, *Cunestrini*, Arachn. 38  
 Trichobythus, *Raffray*, Ins. 131  
 Trichocerosia, *Hampson*, Ins. 250  
 Trichomya, *Ihering*, Moll. 91  
 Trichorrhages, *Warren*, Ins. 275  
 Tricloscelia, *Röder*, Ins. 302  
 Triclonella, *Busck*, Ins. 293  
 Tridacnocaria, *Nobili*, Crust. 35  
 Trieres, *Candèze*, Ins. 154  
 Trifissus, *Jordan and Snyder*, Pisces 20  
 Trigonias, *Lucas*, Mamm. 34  
 Trigonocardia, *Dall*, Moll. 83  
 Trigonodiscus, *Neviani*, Prot. 25  
 Trigonospilus, *Ashmead*, Ins. 211  
 Trimeroceras, *Hyatt*, Moll. 58  
 Trimeropheron, *Rothenbühler*, Myr. 9  
 Trincavellius, *Distant*, Ins. 318  
 Triodontus, *Looss*, Verm. 48  
 Tripleuroceras, *Hyatt*, Moll. 58  
 Triplooceras, *Hyatt*, Moll. 58  
 Tripteroceras, *Hyatt*, Moll. 58  
 Triquetrana, *Simpson*, Moll. 90  
 Trissarthrum, *Ashmead*, Ins. 211  
 Tristira, *Brunner*, Ins. 354  
 Trochodiadema, *Choffat*, Ech. 110  
 Trochoplegma, *Gregory*, Cœl. 23  
 Troglarnadillidium, *Verhoeff*, Crust. 37  
 Trogocryptus, *Sharp*, Ins. 136  
 Trogolinus, *Sharp*, Ins. 129  
 Trogomorpha, *Ashmead*, Ins. 206  
 Tropha, *Weise*, Ins. 187  
 Tropidobracon, *Ashmead*, Ins. 211  
 Trypanostylus, *Cossmann*, Moll. 76  
 Trypetoptera, *Hendel*, Ins. 311  
 Tuberculopleura, *Jakowlew*, Moll. 76  
 Turbinacis, *Gregory*, Cœl. 23  
 Tylodictya, *Hall and Clarke*, Spong. 31  
 Tylotettix, *Morse*, Ins. 354  
 Typhlarnadillidium, *Verhoeff*, Crust. 37  
 Typhlocarcinodes, *Alcock*, Crust. 35  
 Typhlocolpura, *Breddin*, Ins. 320  
 Typhlopodura, *Absolon*, Ins. 345  
 Tyrannophædusa, *Pilsbry*, Moll. 66  
 Ubæna, *Karsch*, Ins. 250  
 Udenus, *Brunner*, Ins. 352  
 Uliocome, *Swinhoe*, Ins. 283  
 Uncula, *Swinhoe*, Ins. 262  
 Uranoceras, *Hyatt*, Moll. 58  
 Urastoma, *Dörler*, Verm. 38  
 Urenchelys, *Woodward*, Pisces 29  
 Urolophia, *Swinhoe*, Ins. 275  
 Urotheca, *Matthew*, Verm. 29  
 Urotrema, *Braun*, Verm. 45  
 Urozana, *Hampson*, Ins. 250  
 Urula, *Hulst*, Ins. 283  
 Usinostia, *Jordan and Snyder*, Pisces 24  
 Utana, *Distant*, Ins. 318  
 Vacerra, *Godman*, Ins. 233  
 Vaginoceras, *Hyatt*, Moll. 58  
 Vehilius, *Godman*, Ins. 233  
 Velutia, *Kerremans*, Ins. 150  
 Venator, *Hogg*, Arachn. 31  
 Venerella, *Cossmann*, Moll. 85  
 Veneritapes, *Cossmann*, Moll. 85  
 Verhoeffiella, *Absolon*, Ins. 345  
 Verrillopsyche, *Cossmann*, Moll. 70  
 Vielliersia, *Monterosato*, Moll. 72  
 Vinius, *Godman*, Ins. 233  
 Virgula, *Simpson*, Moll. 90  
 Virgus, *Simpson*, Moll. 90  
 Visiana, *Swinhoe*, Ins. 275  
 Vitreolina, *Monterosato*, Moll. 80  
 Vorates, *Godman*, Ins. 233  
 Wachsmannia, *Szépligeti*, Ins. 211  
 Wahnesia, *Förster*, Ins. 343  
 Wasmanniella, *Kieffer*, Ins. 297  
 Wauchula, *Hulst*, Ins. 275  
 Websteriella, *Leonardi*, Ins. 336  
 Whittleia, *Tutt*, Ins. 250  
 Williamia, *Monterosato*, Moll. 68  
 Wingia, *Swinhoe*, Ins. 293  
 Wynyardia, *Spencer*, Mamm. 36  
 Xanthetis, *Hampson*, Ins. 250  
 Xanthocolpura, *Breddin*, Ins. 320  
 Xantholopha, *Hampson*, Ins. 250  
 Xanthomima, *Semenov*, Ins. 165  
 Xanthoxena, *Warren*, Ins. 275  
 Xastrum, *Neviani*, Prot. 25  
 Xenendum, *Jordan and Snyder*, Pisces 27  
 Xeniades, *Godman*, Ins. 233  
 Xenocarcinoides, *Borradaile*, Crust. 35  
 Xenocornia, *Schmiedeknecht*, Ins. 206  
 Xenosina, *Warren*, Ins. 275  
 Xenostigma, *Warren*, Ins. 275



Xerocathaica, <i>Andreae</i> , Moll. 64	Zebrias, <i>Jordan and Snyder</i> , Pisces 24
Xynotropis, <i>Blackburn</i> , Ins. 172	Zelomorpha, <i>Ashmead</i> , Ins. 211
Xystonotus, <i>Wolcott</i> , Arachn. 38	Zelotypus, <i>Abeille</i> , Ins. 157
Xystrosus, <i>Jordan and Snyder</i> , Pisces 26	Zenis, <i>Godman</i> , Ins. 233
Zaglyptogastra, <i>Ashmead</i> , Ins. 211	Zittelloceras, <i>Hyatt</i> , Moll. 58
Zamegaspilus, <i>Ashmead</i> , Ins. 211	Zonocryptus, <i>Ashmead</i> , Ins. 206
Zaomma, <i>Ashmead</i> , Ins. 215	Zonopimpla, <i>Ashmead</i> , Ins. 206
Zaops, <i>Rathbun</i> , Crust. 35	Zonops, <i>Turner</i> , Ins. 293
Zapotecia, <i>Eisen</i> , Verm. 33	Zoraida, <i>Kirkaldy</i> , Ins. 328
Zaptix, <i>Pilsbry</i> , Moll. 66	Zygænoprocis, <i>Hampson</i> , Ins. 251
Zarhopalus, <i>Ashmead</i> , Ins. 215	Zygænosia, <i>Hampson</i> , Ins. 251
Zarhynchus, <i>Ashmead</i> , Ins. 206	Zygeupolia, <i>Thompson</i> , Verm. 36
Zariaspes, <i>Godman</i> , Ins. 233	Zygolestes, <i>Ameghino</i> , Mamm. 36
Zauclophora, <i>Turner</i> , Ins. 293	Zygonidia, <i>Kirby</i> , Ins. 343
	Zyzza, <i>Kirkaldy</i> , Ins. 331

CORRIGENDA.

AVES, p. 35 line 17, delete the words "of life."

MOLLUSCA, p. 89 line 15 from bottom, for "*Ptychorhynchus*" read "*Ptychorhynchus*."

CRUSTACEA. The following memoir was accidentally omitted and will be inserted next year. MALAQUIN, A. Nouvelles recherches sur l'évolution des monstrillides. C.R. Ac. Sci. cxxx, pp. 427-430.

INSECTA, p. 6 line 6 from bottom, instead of "*Lamellicorus* from Greenland," read "*Lamellicorns* from Grenada."

„ p. 152 line 23, for "*Archapila*" read "*Arctapila*."

„ p. 160 line 29, instead of "*Maphæa*" read "*Maphoca*."

„ p. 165: the heading "*Oedemeridæ*" and the line following it should follow the *Zonitis* entry.

„ p. 239 line 11 from bottom, delete "subg. n."

„ p. 318 line 1, instead of "*Pudacus*" read "*Padaeus*."

„ p. 325 line 6 from bottom, delete "n. sp." at the end of the entry.

„ p. 335 line 27, for "*websteriella*" substitute "*Websteriella*."

END OF THE THIRTY-SEVENTH VOLUME.

**Cambridge:**

**PRINTED BY J. AND C. F. CLAY,  
AT THE UNIVERSITY PRESS.**

---

## LIST OF VOLUMES OF THE 'ZOOLOGICAL RECORD.'

---

The Record of Zoological Literature, 1864—1868, Vols. i—v. Edited by ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.Z.S., &c. Price 10s. each Volume.

The Record of Zoological Literature, 1869, Volume Sixth. Edited by ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.R.S., F.Z.S., &c. London, 1870. Price 30s.

The Zoological Record for 1870—1872, Vols. vii—ix. Edited by ALFRED NEWTON, M.A., F.R.S., F.L.S., V.P.Z.S., &c. Price 10s. each Volume.

The Zoological Record for 1873—1883, Vols. x—xx. Edited by EDWARD CALDWELL RYE, F.Z.S., M.E.S. Price 10s. each Volume.

The Zoological Record for 1884, 1885, Vols. xxi, xxii. Edited by F. JEFFREY BELL, M.A. Price 10s. each Volume.

The Zoological Record for 1886—1890, Vols. xxiii—xxvii. Edited by FRANK E. BEDDARD, M.A., F.Z.S. Price 10s. each Volume.

The Zoological Record for 1891—1895, Vols. xxviii—xxxii. Edited by D. SHARP, M.A., F.R.S., F.Z.S., &c. Price 10s. each Volume.

The Zoological Record, Volume the Thirty-third ; being Records of Zoological Literature relating chiefly to the year 1896. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. A. Herdman, B. B. Woodward, A. W. Brown, D. Sharp, Florence Buchanan, R. T. Günther, and R. von Lendenfeld. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1897. Price 30s.

The Zoological Record, Volume the Thirty-fourth ; being Records of Zoological Literature relating chiefly to the year 1897. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. A. Herdman, E. R. Sykes, E. A. Smith, G. C. Crick, A. W. Brown, D. Sharp, F. A. Bather, Florence Buchanan, and R. von Lendenfeld. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1898. Price 30s.

The Zoological Record, Volume the Thirty-fifth; being Records of Zoological Literature relating chiefly to the year 1898. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. A. Herdman, E. R. Sykes, E. A. Smith, G. C. Crick, A. W. Brown, D. Sharp, F. A. Bather, Florence Buchanan, R. T. Günther, and R. von Lendenfeld. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., &c. London, 1899. Price 30s.

The Zoological Record, Volume the Thirty-sixth; being Records of Zoological Literature relating chiefly to the year 1899. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. A. Herdman, E. R. Sykes, E. A. Smith, G. C. Crick, A. W. Brown, D. Sharp, F. A. Bather, A. Willey, and R. v. Lendenfeld. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1900. Price 30s.

The Zoological Record, Volume the Thirty-seventh; being Records of Zoological Literature relating chiefly to the year 1900. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. A. Herdman, E. R. Sykes, E. A. Smith, G. C. Crick, A. W. Brown, D. Sharp, F. A. Bather, A. Willey, and E. A. Minchin. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1901. Price 30s.

---

*These publications may be obtained at the SOCIETY'S OFFICE (3, Hanover Square, W.), of Messrs. GURNEY AND JACKSON (Paternoster Row, E.C.), or through any bookseller.*

---

# INDEX-VOLUME OF THE ZOOLOGICAL RECORD.

---

THE Council of the Zoological Society has given instructions for the publication of an Index-Volume to the new generic names mentioned in the 'Zoological Record,' Vols. xvii.-xxxvii. (1880-1900).

The Volumes previous to Vol. xvii. have been indexed in the 'Nomenclator Zoologicus' of Scudder, published by the Smithsonian Institution in 1882. The contemplated Index-Volume of the 'Zoological Record,' in order to increase its usefulness, will include names omitted from Scudder's list and from the volumes of the 'Zoological Record.' Thus zoologists may have at their disposal (in the 'Nomenclator Zoologicus' and the new Index together) a complete list of all the names of genera and subgenera used in zoology up to the end of 1900.

It is earnestly requested that any one who knows of names omitted from Scudder's 'Nomenclator,' or from the volumes of the 'Zoological Record,' will forward a note of them, together, if possible, with a reference as to where they have been noticed or proposed, so that the new list may be made practically complete. Such information should be addressed to the Editor of the 'Zoological Record,' 3, Hanover Square, London, W.; or to C. O. Waterhouse, Esq., British Museum, Natural History, S. Kensington, London, who is engaged in compiling the list.

The terms of subscription to the Index-Volume will be to Subscribers to the 'Zoological Record,' 10s.; to other Subscribers, 15s.

Subscribers to the 'Zoological Record' itself should intimate their intention to subscribe to the Index-Volume, as, unless they do so, their names will not be placed on the subscription-list.

A limited number of copies (beyond those required for Subscribers) will be printed. These will be placed at the disposal of the public, at the price of £1 per copy, by the Society, and by Messrs. Gurney & Jackson, 1, Paternoster Row, E.C.

Attention is called to the offer of the Society to supply a complete set of the Record to the end of the nineteenth century, including the Index-Volume, for £15.

The date of closing the subscription-list for the Index-Volume has been extended to January 31st, 1902. *Subscriptions must be paid to the Zoological Society before that date.*

The Volume will be published about March, 1902.

P. L. SCLATER,  
*Secretary.*

Nov. 1st, 1901.

ZOOLOGICAL SOCIETY OF LONDON,  
3, HANOVER SQUARE, W.

# THE ZOOLOGICAL RECORD.

---

THE object of the ZOOLOGICAL RECORD is to give, by means of an annual Volume, complete lists of the Works and Publications relating to Zoology in all its branches that have appeared during the year preceding the issue of the Volume, together with full information as to the points they deal with, arranged in such a manner as to serve as an Index to the literature of Zoology in all parts of the globe, and thus to form a repertory which will retain its value for the Student in future years.

The 'Zoological Record' is published for the Society by Messrs. Gurney and Jackson at the price of 30s. per volume. But all Members of the Zoological Society of London have the privilege of receiving it, including the cost of delivery (within the United Kingdom), at a subscription price of 20s. per annum. This Subscription is due on the 1st of July in every year, and the privilege of Subscription is forfeited unless the amount be paid before the 1st of December following.

The Zoological Society, having purchased the entire stock of the 'Zoological Record,' are able to supply complete sets. The thirty-seven Volumes to the end of the nineteenth century, and the Index-Volume in addition, will be supplied for £15. Volumes of any single year (exclusive of the last five volumes and Vol. 6) can likewise be supplied at 10s. per volume.

Members of the Society wishing to subscribe to the 'Record' are requested to apply at this office for a Form, to be returned when filled up and signed by the subscriber. In order to facilitate the payment of the subscription, a Banker's Order Form is also furnished to those who prefer that mode of payment. This order, when filled up and signed, should be sent to the Society's office for registration; it will then be sent to the Agents named therein.

Learned Societies and Institutions and members of the former Zoological Record Association are permitted to subscribe to the 'Record' on the same conditions as are accorded to Members of the Zoological Society.

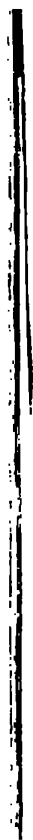
P. L. SCLATER,  
*Secretary.*

Nov. 1, 1901.

ZOOLOGICAL SOCIETY OF LONDON,  
3, HANOVER SQUARE, W.

---









STANFORD UNIVERSITY LIBRARY

To avoid fine, this book should be returned on  
or before the date last stamped below

LIBRARY OF THE  
SCHOOL OF BIOLOG

